

**UNIVERSITY OF DELHI****STRUCTURE, COURSES & SYLLABI OF SKILL ENHANCEMENT  
COURSES****(SEMESTER – 1)**

based on  
Undergraduate Curriculum Framework 2022 (UGCF)  
(Effective from Academic Year 2022-23)



University of Delhi

**(GENERAL POOL OF COURSES OFFERED TO STUDENTS OF ALL  
UNDERGRADUATE PROGRAMMES)**

Course Title	Nature of the Course	Total Credits	Components			Contents of the course and reference is in
			Lecture	Tutorial	Practical	
Communication in Everyday Life	SEC-1.	2	2	0	0	Annexure-I (Page No. 2-4)
Communication in Professional Life	SEC-2.	2	2	0	0	Annexure-I (Page No. 5-7)
Creative Writing	SEC-3.	2	2	0	0	Annexure-I (Page No. 8-10)
Public Speaking in English Language and Leadership	SEC-4.	2	2	0	0	Annexure-I (Page No. 11-13)
PERSONALITY DEVELOPMENT AND COMMUNICATION	SEC-5.	2	1	0	1	Annexure-I (Page No. 14-15)
Business Communication	SEC-6.	2	1	0	1	Annexure-I (Page No. 16-18)
Political Leadership and Communication	SEC-7.	2	1	0	1	Annexure-I (Page No. 19-21)
Cyber Sphere and Security: Global Concerns	SEC-8.	2	1	0	1	Annexure-I (Page No. 22-24)

Basic IT Basic IT Tools Tools	SEC-9.	2	0	0	2	<b>Annexure-I (Page No. 25-27)</b>
ADVANCED SPREADSHEET TOOLS	SEC-10.	2	0	0	2	<b>Annexure-I (Page No. 28-31)</b>
FINANCIAL DATABASE: STATISTICAL SOFTWARE PACKAGE SE AND ANALYSIS SOFTWARE	SEC-11.	2	0	0	2	<b>Annexure-I (Page No. 32-34)</b>
Statistics with 'R'	SEC-12.	2	0	0	2	<b>Annexure-I (Page No. 35-37)</b>
STATISTICAL SOFTWARE PACKAGE	SEC-13.	2	0	0	2	<b>Annexure-I (Page No.38-39)</b>
Essentials of Python	SEC-14.	2	0	0	2	<b>Annexure-I (Page No. 40-42)</b>
Programming using Python	SEC-15.	2	0	0	2	<b>Annexure-I (Page No. 43-45)</b>
ANALYTICS / COMPUTING WITH PYTHON	SEC-16.	2	0	0	2	<b>Annexure-I (Page No. 46-47)</b>
Business Intelligence and Data Visualisation	SEC-17.	2	0	0	2	<b>Annexure-I (Page No. 48-50)</b>
Digital Marketing	SEC-18.	2	0	0	2	<b>Annexure-I (Page No. 51-53)</b>
Big Data Analytics	SEC-19.	2	0	0	2	<b>Annexure-I (Page No. 54-56)</b>
Back-End Web Development	SEC-20.	2	0	0	2	<b>Annexure-I (Page No. 57-58)</b>
Front End Web Design and Development	SEC-21.	2	0	0	2	<b>Annexure-I (Page No. 59-61)</b>
APP Development using Flutter	SEC-22.	2	0	0	2	<b>Annexure-I (Page No. 62-63)</b>
Introduction to Cloud Computing (AWS)	SEC-23.	2	0	0	2	<b>Annexure-I (Page No. 64-65)</b>
Introduction to Blockchain	SEC-24.	2	0	0	2	<b>Annexure-I (Page No. 66-67)</b>
VISUAL COMMUNICATION AND PHOTOGRAPHY	SEC-25.	2	0	0	2	<b>Annexure-I (Page No. 68-70)</b>
: CAD FOR FASHION	SEC-26.	2	0	0	2	<b>Annexure-I (Page No. 71-73)</b>

**SKILL ENHANCEMENT COURSES – 17 ADDITIONAL SUGGESTIVES**

Name of the Course	Nature of the Course	Total Credit	Components			Pages to Annexur-6.09
			L	T	P	
Negotiation and Leadership	SEC-27	2	0	0	2	<b>1-3</b>
Entrepreneurship Development	SEC-28	2	0	0	2	<b>4-5</b>
Finance for Everyone	SEC-29	2	0	0	2	<b>6-8</b>
Personal Financial Planning	SEC-30	2	0	0	2	<b>9-11</b>
Harmonium	SEC-31	2	0	0	2	<b>12-14</b>
Environmental Audit	SEC-32	2	0	0	2	<b>15-16</b>
SUSTAINABLE ECOTOURISM AND ENTREPRENEURSHIP	SEC-33	2	0	0	2	<b>17-19</b>
DEVELOPING SUSTAINABILITY PLANS FOR A BUSINESS	SEC-34	2	0	0	2	<b>20-22</b>
PROSPECTING E-WASTE FOR SUSTAINABILITY	SEC-35	2	0	0	2	<b>23-25</b>
E Tourism	SEC-36	2	0	0	2	<b>26-27</b>
Digital Film Production	SEC-37	2	0	0	2	<b>28-30</b>
Graphics Design & Animation	SEC-38	2	0	0	2	<b>31-33</b>
Arabic Calligraphy	SEC-39	2	0	0	2	<b>34-35</b>
RachnatmakLekhan	SEC-40	2	0	0	2	<b>36-38</b>
PatkathaLekhan	SEC-41	2	0	0	2	<b>39-40</b>
Rangmanch	SEC-42	2	0	0	2	<b>41-42</b>
Beginners Course to Calligraphy	SEC-43	2	0	0	2	<b>43-44</b>



## SKILL ENHANCEMENT COURSES

(GENERAL POOL OF COURSES OFFERED TO STUDENTS OF ALL UNDERGRADUATE PROGRAMMES)

### Introduction

The NEP 2020 envisages imparting life skills as well as technical and professional skills as part of holistic education. University of Delhi has prepared various Skill Enhancement Courses in different domains to provide kinds of skills to the students, such as Communication Skills, Computer related skills, Coding skills, financial management skills, etc. with higher degree of hands on learning so as to equip them with the skills of their choice suitable to the academic path they choose. **(PLEASE SEE and ADD)**

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Skill Enhancement Courses, from which she has to choose one to study in the first Semester. A generic structure of the first Semester of an undergraduate programme is provided below for reference:

### STRUCTURE OF FIRST SEMESTER

Semester	Core (DSC) 4 credits	Elective (DSE) 4 credits	Generic Elective (GE) 4 credits	Ability Enhancement Course (AEC) – 2 credits	Skill Enhancement Course (SEC) – 2 credits	Internship/ Apprenticeship/Project/ Community outreach 2 credits	Value addition course (VAC) 2 credits	Total Credits
I	DSC - 1 DSC - 2 DSC - 3	<b>NIL</b>	GE-1	AEC -I	Choose one from a pool of SEC courses	<b>NIL</b>	VAC- I	22 credits

## SEC – 1: Communication in Everyday Life

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2	2				

### Learning Objectives

The Learning Objectives of this course are as follows:

- To lay down a basic foundation for basic communication that is a part of a student's everyday life.
- To inculcate the fundamentals of communication with the aim to enhance listening, speaking and writing skills.
- To hone practical skills that can be used in day-to-day affairs.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to improve mediation skills.
- After studying this course, students will be able to building human relationships.
- After studying this course, students will be able to foster societal understanding & develop an independent perspective.
- After studying this course, students will be able to enhance social communication skills of students.

## SYLLABUS OF SEC-1

**THEORY** (8 hrs.)

**UNIT 1** (4 hrs.)

**Theory of Communication**

- Meaning, Features, Uses, Cycle, Feedback, Advantages
- Barriers
- 7 C's of Communication

**UNIT 2** (1 hr.)

**Reading Skills**

- Close Reading
- Skimming
- Scanning

**UNIT 3** (4 hrs.)

**Writing Skills**

- Summarising
- Paraphrasing
- Note-making
- Essays- Expository Essay, Descriptive Essay, Narrative Essay
- Letter Writing- Formal Letter, Informal Letter

**PRACTICE SESSIONS** (24 hrs.)

**Speaking Skills** (12 hrs.)

- Oral Presentation- Audio-Visual aids, Audience & Feedback, Delivery of Presentation, Handling Questions (3 hrs.)
- Group Discussion- Culture & History, Current Affairs, Society-related (3 hrs.)
- Public Speaking- Public Speech, Extempore (3 hrs.)
- Interview- Personal, Conversational, Public (3 hrs.)

**Listening Skills** (5 hrs.)

- Netiquettes (1 hr.)
- Audio-book Listening & Discussions (3 hrs.)
- Note-taking (1 hr.)

**Writing Skills** (7 hrs.)

- Reports- Incidence, Newspaper, Organisational Report (3 hrs.)
- Analysis & Interpretation- Textual (2 hrs.)
- Intra & Inter-personal Skills - Monologue, Dialogue (2 hrs.)

Total Hours for Theory= 8

Total Hours for Practice Sessions= 24

Total Hours of classes= 32

### **Suggested Readings**

- Chaudhary, Shoma. “Understanding Interviews, Billy Elliot is my Story, Only Less Happy”. Tehelka: The People’s Paper, 18 February 2006.
- Kumar, Dinesh. “Understanding Values, Our Muddled Generation”. The Hindu, 26 March 2006.
- Learning to Write I, “Free Writing”. In Fluency in English II, ed. Varma, Pramodini and Mukti Sanyal, pp. 1-5, Oxford, New Delhi, 2015.
- Learning to Write II, “Editing”. In Fluency in English II, ed. Varma, Pramodini and Mukti Sanyal, pp. 25-27, Oxford, New Delhi, 2015.
- Learning to Write III, “What makes Good Writing Good”. In Fluency in English II, ed. Varma, Pramodini and Mukti Sanyal, pp. 48-51, Oxford, New Delhi, 2015.

### **Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**SEC –2: Communication in Professional Life**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2	2				

**Learning Objectives**

The Learning Objectives of this course are as follows:

- To prepare the students for their upcoming professional fields.
- To inculcate the fundamentals of professional and business communication.
- To learn aspects of global communication.
- To enhance employability skills of the learners by enabling them to write effective resumes and face interviews with confidence

**Learning outcomes**

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to improve presentation skills to be learnt by effective use of verbal and non-verbal communication for the professional field.
- After studying this course, students will be able to acquire practical employability skills to be disseminated through focussed sessions on practical employable knowledge.
- After studying this course, students will be able to enhance professional communication.
- After studying this course, students will be able to improve persuasion and negotiation skills which will be useful for the professional field.



## SYLLABUS OF SEC-2

**THEORY** (8 hrs.)

**UNIT 1** (2 hrs.)

- Theory of Business Communication (1 hr.) -
- Introduction
- What is Business Communication?
- Language of Business Communication
- Cultural Components – Cross-Cultural Communication, Cultural Shock, Stereotyping, Ethnocentrism
- Miscommunication & Effective Communication (1hr.)

**UNIT 2** (6 hrs.)

### Writing Skills

- Summarising & Paraphrasing (1 hr.)
- Job-Oriented Skills- CV, Resume & Bio- Data, Job Application Letter (1hr.)
- Documentation (1)
- Advertisements & Invitation (1 hr.)
- Letter Writing- Applications, Business Letters (1 hr.)
- Report- Analytical Report, Project Report (1 hr.)

**PRACTICE SESSIONS** (24 hrs.)

### Speaking Skills (14 hrs.)

- Presentation Skills- Oral Presentation, Ppt. Preparation, Ppt. Presentation (3 hrs.)
- Group Discussion (3 hrs.)
- Talks- Domain-specific, Ted-Talks, Business Meets, Motivational Talks (2 hrs.)
- Telephonic Skills (1 hr.)
- Persuasion Skills (1 hr.)
- Meeting & Negotiation (1 hr.)
- Interview- Promotion Interview, Job Interview, Business Interview (2 hrs.)
- Functions and activities of PR (1 hr.)

### Listening Skills (5 hrs.)

- Netiquettes (1 hr.)
- Audio-book Listening & Discussions (3 hrs.)
- Note-taking (1 hr.)

### Writing Skills (5 hrs.)

- Digital Communication in Social Space- Social Media Posts (Twitter, Facebook), Blog Writing, Review Writing (2 hrs.)
- Advertisement/Invitation/Poster Designing- Canva/MS Word/Coral (1 hr.)
- Memo, Office Order, Minutes (1 hr.)
- Making Online Academic/Work Profile- LinkedIn (1 hr.)

Total Hours for Theory= 8

Total Hours for Practice Sessions= 24

Total Hours of classes= 32

### **Suggested Readings**

- Kaushik, J.C. and K.K. Sinha eds., English for Students of Commerce, Oxford University Press, New Delhi.
- Sethi, Anjana & Bhavana Adhikari, Business Communication, Tata McGraw Hill.
- Anjana Neira Dev, et.al, eds. Business English, Department of English, University of Delhi, 2011, Pearson Publications, New Delhi.

### **Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 3: Creative Writing

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2	2				

### Learning Objectives

The Learning Objectives of this course are as follows:

- To build creative writing skills of students in the main modes of creative writing viz poetry, fiction (novel, short stories), non-fiction (life narratives, autobiographies and biographies) and drama.
- To inculcate practical skills in students by mapping their creative talent which be beneficial for employability too.
- To perform hands-on-activities to students to develop their creative skills through practical sessions.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to be sensitive to the texture of literary language.
- After studying this course, students will be able to develop craft in creative writing.
- After studying this course, students will be able to develop sense of expressing themselves through poetry/short story/biography.
- After studying this course, students will be able to induce an understanding of the relationship between an individual and society.
- After studying this course, students will be able to get into different fields and pursue versatile career opportunities.
- After studying this course, students will be able to develop an understanding of theatre and performance through drama will also help them to develop observatory and behavioural skills.
- After studying this course, students will be able to develop a critical thought process and a knack in putting it in words. Students may also utilise the learnings of proofreading and editing for their academic and professional growth.
- After studying this course, students will be able to go for publishing their own work.

- After studying this course, students will be able to write a book and submit to professional bodies & academic organisations.

## SYLLABUS OF SEC-3

### THEORY

Credit: 1.

#### UNIT 1 (2 hrs.)

- Introduction to Creative Writing- Meaning, Importance, Imagination & Writing (1 hr.)
- Craft of Writing- Figure of Speech, Word Play, Character Creation (1 hr.)

#### UNIT 2 (2 hrs.)

- Close Reading (0.5 hr.)
- Analysis and Interpretation (0.5 hr.)
- Proofreading & Editing (1 hr.)

#### UNIT 3 (4 hrs.)

- Steps of Creative Writing- Pre-Writing, Writing, Post-Writing/Final Draft (1 hr.)
- Types of Creative Writing- Poetry, Fiction, Non-Fiction (Life Narratives), Drama (2 hrs.)
- Creative Writing & Media- Film Review, Book Review, Other Writings in Media, Submission, Publication (1 hr.)

#### PRACTICE SESSIONS (24 hrs.)

- Imagination & Writing- Peer-interaction, Activities on Imagination (1 hr.)
- Tropes, Motifs and Figures- Learning tropes, motifs and figures through videos, Discussion on the findings (2 hrs.)
- Character Creation- Dialogue Enaction, Learning Characters through discussion on famous writings, Character Analysis, Writing activities on creating different types of characters (gender/social background/ethnicity etc.) (3 hrs.)
- Reading, Analysis and Interpretation- Reading different works in Literature, Discussion in small groups, Practice Writing Session (2 hrs.)
- Proofreading & Editing- Practice sessions on Proofreading & Editing of different types of writing (2 hrs.)
- Learning to write Poetry- Reading & understanding Poetry; Practising tone, rhyme, metre, verses; Writing sessions (3 hrs.)
- Learning to write Fiction- Reading & understanding Fiction; Practicing different elements of fiction (Short story, Novella, Novel); Writing sessions (3 hrs.)
- Learning to write Non-Fiction- Reading & understanding Non-Fiction (Biographies & Autobiographies); Practicing different elements of non-fiction; Writing sessions (3 hrs.)
- Learning to write Drama- Reading & understanding Drama; Practicing different elements (plot, character, climax, verbal & non-verbal cues) of Drama; Writing sessions (3 hrs.)

- Submission & Publication (in Print & Digital) - Discussions over how & where to submit and publish (online/offline), Hands-on activities (2 hrs.)

Total Hours for Theory= 8

Total Hours for Practice Sessions= 24

Total Hours of classes= 32

### **Suggested Readings**

- *Creative Writing: A Beginners' Manual* by Anjana Neira Dev et al. for The Department of English, University of Delhi (New Delhi: Pearson, 2008).

### **Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 4: Public Speaking in English Language and Leadership

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>	<b>2</b>				

### Learning Objectives

The Learning Objectives of this course are as follows:

- To impart leadership skills to students along with adequate communication skills to curate strong leaders in the emerging social, political and corporate world.
- To create leaders with ethics and resilience in industry based fields as well as social fields.
- To allow students to realise their leadership skills and curate them through a hand-on practical approach which will be helpful in generating employable skills for them.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to learn effective communication through Public Speaking will instil leadership development among students.
- After studying this course, students will be able to to lead in different fields at the undergraduate level, be responsible citizens and employ leadership skills in their future endeavours, too.
- After studying this course, students will be able to strengthen their critical mindset, help them being assertive and put forward constructive viewpoints employing the skills learnt in the practice sessions.

## SYLLABUS OF SEC-4

**Theory (8 hrs.)**

**UNIT 1 (1 hr.)**

- Introduction to Effective Communication- Features, Advantages & Disadvantages
- Importance of Listening
- Oral communication- Meaning, Features & Importance

**UNIT 2 (3 hrs.)**

- Public Speaking- (2 hrs.)
  - What is Speech?, Overcoming Fear of Public Speaking, Language of Public Speech
  - Drafting a Public Speech (Reading, research, writing, Fact check, Re-writing, Delivery)
  - 3P's of Public Speaking (Preparation, Practice, Performance)
  - Rhetoric Skills, Art of Informative & Persuasive speaking, Concluding Speech with Power
- Types of Public Speaking- (1 hr.)
  - Physical & Online
  - Political, Organisational, Educational & Motivational
  - Ted Talks, Public Speaking in Media

**UNIT 3 (4 hrs.)**

- Leadership Skills- (2 hrs.)
  - Meaning, Features & Importance
  - Historical Overview
  - Leadership in Academic Life, Corporate Space, Public Life, Social Leadership and Political Leadership
- Leadership & Innovations- (2 hrs.)
  - Audience analysis
  - Audience Engagement & Leadership
  - Influencing through Leadership

**UNIT 4 (1 hr.)**

- Importance of Public Speaking in developing Leadership Skills
- Ethics in Public Speaking & Leadership

**PRACTICE SESSIONS (24 hrs.)**

- Reading Public Speech- Reading documented speeches delivered in the past; Understanding the art of word play, vocabulary and putting thoughts into words (4 hrs.)
- Listening in groups and Discussion- Listening famous speeches (from history & everyday life); Analysis of its elements & classroom discussion (4 hrs.)
- Writing Public speech- Classroom Practice Sessions (4 hrs.)
- Execution & Delivery of Public Speech- Learning rhetorics through speeches in the form of Audio/ Video; Learning Body Language & Paralanguage through ICT (4 hrs.)

- Developing leadership competence through Public Speaking- Intra-class Speech Competitions; Extempore; Group Discussion (4 hrs.)
- Mock Parliament/MUNs (2 hrs.)
- Workshop (2 hrs.)

Total Hours for Theory= 8

Total Hours for Practice Sessions= 24

Total Hours of classes= 32

**Suggested Readings:**

- Beebe, S. A., & Beebe, S. J. (2012). Public speaking: An audience-centred approach. (8th ed.). Boston: Pearson.
- Cardon, P. (2014). Business communication: Developing leaders for a networked world. (international ed.). New York: McGraw-Hill.
- Jaffe, C. I. (2013). Public speaking: Concepts & skills for a diverse society. (7th ed.). Boston: Cengage Learning.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.



## SEC – 5 : PERSONALITY DEVELOPMENT AND COMMUNICATION

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>	<b>1</b>		<b>1</b>		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To develop inter personal and effective communication skills.
- To develop problem solving skills and understand its influence on behaviour and attitudes of individuals.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of oral and written communication in day-to-day working of the organisation.
- After studying this course, students will be able to develop inter personal skills and problem-solving skills.
- After studying this course, students will be able to understand the role of body language in effective communication.

### SYLLABUS OF SEC-5

#### **Unit 1**

**(4 Weeks)**

Introduction, need for Communication, Process of Communication, Written and Verbal Communication, Visual communication, Signs, Signals and Symbols, Silence as a Mode of Communication, Inter-cultural, Intra-cultural, Cross-cultural and International communication, Communication through Questionnaires, Business Letter Writing, Electronic Communication.

#### **Unit 2**

**(4 Weeks)**

Business Cases and Presentations, Letters within the Organizations, Letters from Top Management, Circulars and Memos, Business Presentations to Customers and other

stakeholders, presenting a Positive Image through Verbal and Non-verbal Cues, Preparing and Delivering the Presentations, Use of Audio-visual Aids, Report Writing.

**Unit 3** **(4 Weeks)**

Barriers to Communication, Improving Communication Skills, Preparation of Promotional Material, Non-verbal communication, Body language, Postures and gestures, Value of time, Organizational body language, Importance of Listening, Emotional Intelligence. Working individually and in a team, Leadership skills, Leadership Lessons, Team work and Team building, Feedback, Feed forward Interpersonal skills – Delegation, Humour, Trust, Expectations, Values, Status, Compatibility and their role in building team – work Conflict Management – Types of conflicts, how to cope with conflict.

**Unit 4** **(3 Weeks)**

Negotiation Skills, Types of Negotiation, Negotiation Strategies, Selling skills – Selling to customers, Selling to Superiors Selling to peer groups, team mates and subordinates, Conceptual selling, Strategic selling, Selling skills – Body language.

**Essential/recommended readings**

- Kushal Jin – Business Communication, VK India.
- Krishnamacharyulu, C. S. G, Ramakrishnan Lalitha – Personality Development, Interpersonal Skills and Career Management, Himalaya Publishing.
- Corvette Budjac – Conflict Management: A Practical Guide to Developing Negotiation Strategies, Pearson.

**Suggestive Readings**

- Mitra, B. K., Personality Development and Soft Skills, Oxford University Press.
- Kumar Sanjay and Pushplata, Communication Skills, Oxford University Press.
- Mandal S. K., Effective Communication and Public Speaking, Jaico Publishing.

**Note:** Latest edition of the readings may be used

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 6: Business Communication

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>	<b>1</b>		<b>1</b>		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To train students to enhance written as well as oral communication in the corporate world.
- To help students in understanding the principles and techniques of business communication.
- To understand the use of electronic media for communication.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to explain the need for communication in management.
- After studying this course, students will be able to appreciate the need of effective writing for communication.
- After studying this course, students will be able to demonstrate the skill of effective report writing and summarizing annual reports.
- After studying this course, students will be able to analyse business correspondence and e-correspondence.
- After studying this course, students will be able to appreciate oral presentations.

□

### SYLLABUS OF SEC-6

#### **Unit 1: Introduction to the essentials of Business Communication (3 weeks)**

Meaning, process and functions. Need and importance. Medium: verbal & non-verbal communication. Channels: formal & informal. Levels of communication. Direction of communication: downward, upward, lateral, & diagonal. Effective communication: difficulties/barriers and solutions. Interactive and non-interactive techniques of communication. Listening as a tool of communication, Guidelines for effective listening.

**Unit 2: Effective Writing (3 weeks)**

Guidelines for clear writing. References, bibliographical research tools. Citing methods, footnotes, discussion footnotes. Use of library and internet for collection, classification and interpretation of data and information.

**Unit 3: Report Writing (3 weeks)**

Types of reports. Formal report: components and purpose. Organising information: outlining & numbering sections, section headings, sub-headings, & presentation. Writing reports on field work/visits to industries, business concerns. Summarising annual reports of companies: purpose, structure and principles. Drafting minutes.

**Unit 4: Business Correspondence and E-Correspondence (3 weeks)**

Need and importance of business letters. Office memorandum, office circulars, notices and orders. Technology for communication. Effective IT communication tools. Electronic mail: advantages, safety and smartness in email. E-mail etiquettes.

**Unit 5: Spoken English and Oral Presentation (3 weeks)**

Effective negotiation: elements, process and general guidelines. Telephonic conversation. Conducting & facing interviews. Conducting & participating in group decisions. Making presentations: content and organising. Features of a good presentation. Delivering a presentation.

**Practical Exercises:**

The learners are required to:

- learn how to summarise annual reports of companies.
- prepare presentations using power-point.
- participate in Group discussions and mock interviews.
- smartly draft business emails.

**Essential/recommended readings**

- C.B.Gupta (2019). Essentials of Business Communication, Sultan Chand & Sons.
- Kaul, A. Effective Business Communication, 2nd ed. PHI learning
- Lesikar, R.V. & Flatley, M.E. (2001). Basic Business Communication Skills for Empowering the Internet Generation, Tata McGraw Hill Publishing Company Ltd. New Delhi.
- Ludlow, R. & Panton, F.(1992). The Essence of Effective Communications, Prentice Hall of India Pvt. Ltd., New Delhi.
- Meyer C,Dev(2021). Communicating for Results,Oxford University Press
- Quintanilla, Kelly M, (2021), Business and Professional Communication, 4e, Sage Textbook
- R. C. Bhatia (2008), Business Communication, Ane Books Pvt Ltd, New Delhi.
- Raman and Singh(2012). Business Communication. Oxford University Press
- Scot, O., Contemporary Business Communication. Biztantra, New Delhi.

**Note: Learners are advised to use the latest edition of readings.**

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 7: Political Leadership and Communication

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>	<b>1</b>		<b>1</b>		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the cross-cutting multi-disciplinary linkage of the subject.
- To gain a basic understanding of specific concepts and critical review of political communication and election campaign studies.
- To be able to construct a linkage between political communication and leadership.
- To learn conceptual frameworks and qualitative research skills for the analysis of modes and techniques of political communication and leadership.

### Learning outcomes

The Learning Outcome of this course is as follows:

- After studying this course, students will be able to have a professional/career-oriented insight by facilitating their journey as Media managers, policy makers, political analysts, Journalists, Public relations officers in government agencies, political parties and higher education.

### SYLLABUS OF SEC-7

#### **Unit I: Explaining Political Communication (3 weeks)**

- Meaning, Nature and Scope
- Evolution and Transformation

#### **Unit II: Exploring Leadership (3 weeks)**

- Themes, Theories and Typologies
- Participation and Performance

**Unit III: Expanding Political Communication and Leadership: Orientation and Action**  
(3 weeks)

- Developing Communication and Leadership through Research
- Strengthening Techniques of Communication and Leadership

**Unit IV: Extending Political Communication and Leadership: Research Issues and Challenges**  
(3 weeks)

- Researching Communication and Leadership through Survey: Opinion Poll, Exit Poll.
- Examining Contemporary Issues and Challenges in Communication and Leadership

**Unit V: Executing Political Communication and Leadership: Empirical and Professional Implications**  
(4 weeks)

- Psephology as an Art and Vocation
- Exploring Career Options

**Essential/recommended Readings:**

- Pole (2009). *Blogging the Political: Politics and Participation in a networked Society*. New York: Routledge.
- D. A. Graber (2005). 'Political Communication Faces the 21st Century', *Journal of Communication*, September: 479-507.
- Frank Esser and Barbara Pfetsch (eds.). (2004). *Comparing Political Communication-Theories, Cases and Challenges*. Cambridge: Cambridge University Press.
- G. Gerbner, L. Gross, M. Morgan and N. Signorielli (1982). 'Charting the Mainstream: Television's Contribution to Political Orientations', *Journal of Communication*, 32(2): 100-27.
- H. A. Semetko and M. Scammell (eds.) (2012). *The SAGE Handbook of Political Communication*. London: Sage.
- John C Maxwell (2008). *Developing the Leader Within You*. New Delhi: Harper Collins.
- Kiran Prasad (ed.) (2003). *Political Communication: The Indian Experience*. New Delhi: B.R. Publishers.
- Max Depree (2004). *Leadership is an Art*. RHUS Publications.
- Yogesh Atal (2014). 'Matdataoin Ka Sansar', *Pratiman*, Vol.2, No.1.
- Yogesh Atal (2018). 'Chunav Shastra Aur Rajniti', *Pratiman*, No.11.

**Web Source**

- <http://www.politicalcommunication.org/history.html>

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.



## SEC – 8: Cyber Sphere and Security: Global Concerns

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>	<b>1</b>		<b>1</b>		

### Learning Objectives

The Learning Objective of this course is as follows:

- To spread awareness and enlightening visions of the indiscriminate and diversified students to ensure their immediate and basic cyber safety and prevent loss due to sheer ignorance.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to apprehend key terms of cyber domain and identify cyber threats.
- After studying this course, students will be able to understand cyber law concepts, intellectual property and Digital Rights Management.
- After studying this course, students will be able to diagnose and examine basic security loopholes, anomalous behavior in internet.
- After studying this course, students will be able to understand principles of web security.
- After studying this course, students will be able to secure and protect personal data with safe Internet usage.
- After studying this course, students will be able to assimilate approaches for incident analysis and response, risk management and best cyber security practices.

## SYLLABUS OF SEC-8

### **Unit I: Introducing Cyber ‘Sphere’ and ‘Security’ (3 Weeks)**

- Cyber Terminologies: Cyber Sphere, Cyber Security, Cyber Crime, Cyber Attack, Cyber Espionage, Cyber Warfare, Cybernetics
- Cyber Security and Paradigms
- Cyber Security: Objectives and Roles

### **Unit II: Cyber Crime: Insight, Mitigation and Control (3 Weeks)**

- Cyber Crime and Cyber Activism: An Overview
- Typologies of Cyber Crimes: Generic Cyber Crimes, Advanced Persistent Threats (APTs), Cyber Threat in Mobile Technology, Cloud Computing and BYOD
- Cyber Crime Identification, Risk Assessment, Management and Control

### **Unit III: Cyber Policies and Cyber Law (3 Weeks)**

- Cyber Policies and Cyber Law: Dimensions, Determinants, Dilemmas
- Existing Cyber Policies and Must Follow Up Actions
- Grey Areas in Cyber Laws

### **Unit IV: Security Tools and Usage (3 Weeks)**

- Knowledge and Identification of Security Tools
- Cyber Security Aspects
- Cyber Security Toolkits

### **Unit V: Cyber Security: Case Studies (4 Weeks)**

- Government Institutions
- Banks and Financial Institutions, Commercial Websites, Point of Sale issues and Online Payment
- Real Time Cases

### **Essential Readings:**

- Bertrand Venard (2019). ‘Cyber Security: The New Art of War’, Lecture delivered at Developing Countries Research Centre [dcrc], University of Delhi, 1 April 2019.
- Bertrand Venard (2019). ‘The Determinants of Cybersecurity Behaviours: Qualitative Research Among French Students’ in C. Onwubiko, X. Bellekens, A. Erola, M. Jaatun and C. Nogueira (eds.), Proceedings of the Cyber Science 2019: Cyber Situational Awareness for Predictive Insight and Deep Learning. UK: University of Oxford.
- Bertrand Venard (2019). Cybersecurity Among students. UK: Wolfson College, University of Oxford.
- Bertrand Venard (2019). Cyber Aggressions in the XXIst Century: Equation of a Crisis. UK: University of Oxford.
- Cristopher Hadnagy (2018). Social Engineering: The Science of Human Hacking, 2nd Edition. New York: Wiley.

- John Erickson (2008). *The Art of Exploitation* (2nd Edition). San Francisco: No Starch Press.
- Kevin Mitnick and Robert Vamosi (2017). *The Art of Invincibility*. Boston: Little, Brown and Company.
- Kevin Mitnick (2012). *The Ghost in the Wires: My Adventures as the World's Most Wanted Hacker*. New York: Back Bay Books.
- Yogesh Atal and Sunil K Choudhary (2013). *Combating Corruption: The Indian Case*. Hyderabad and New Delhi: Orient Blackswan.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 9 : Basic IT Tools

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students develop IT skills that are a pre-requisite in today's work environment.
- To equip them with basic computing skills that will enhance their employability in general.
- To enable the student to analyse and present information in a meaningful manner.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to use word-processor to generate documents with appropriate formatting, layout, review and referencing.
- By studying this course, students will be able to manage data in worksheets and workbooks and analyze it using spreadsheet functions and inbuilt formulas.
- By studying this course, students will be able to draw analysis on data using spreadsheets to make decisions.
- By studying this course, students will be able to make meaningful representations of data in the form of charts and pivot tables.
- By studying this course, students will be able to manage data in database tables and use the same for generating queries, forms and reports.

### SYLLABUS OF SEC-9

#### Course Contents:

#### Unit 1: Introduction to Spreadsheets

(4 Weeks)

Spreadsheets: Concept of worksheets and workbooks, creating, opening, closing and saving workbooks, moving, copying, inserting, deleting and renaming worksheets, working with multiple worksheets and multiple workbooks, controlling worksheet views, naming cells using name box, name create and name define; Exchanging data using clipboard, object linking and

embedding; Printing and Protecting worksheets: Adjusting margins, creating headers and footers, setting page breaks, changing orientation, creating portable documents and printing data and formulae; Implementing file level security and protecting data within the worksheet; Understanding absolute, relative and mixed referencing in formulas, referencing cells in other worksheets and workbooks, correcting common formula errors, working with inbuilt function categories like mathematical, statistical, text, lookup, information, logical, database, date and time and basic financial functions.

**Unit 2: Data Analysis in Spreadsheets (4 Weeks)**

Consolidating worksheets and workbooks using formulae and data consolidate command; Choosing a chart type, understanding data points and data series, editing and formatting chart elements, and creating sparkline graphics, Analysing data using pivot tables: Creating, formatting and modifying a pivot table, sorting, filtering and grouping items, creating calculated field and calculated item, creating pivot table charts, producing a report with pivot tables. Introduction to recording and execution of macros.

**Unit 3: Word Processing (3 Weeks)**

Introduction: Creating and saving your document, displaying different views, working with styles and character formatting, working with paragraph formatting techniques using indents, tabs, alignment, spacing, bullets and numbering and creating borders; Page setup and sections: Setting page margins, orientation, headers and footers, end notes and foot notes, creating section breaks and page borders; Working with tables: Creating tables, modifying table layout and design, sorting, inserting graphics in a table, table math, converting text to table and vice versa; Create newspaper columns, indexes and table of contents, Spell check your document using inbuilt and custom dictionaries, checking grammar and style , using thesaurus and finding and replacing text; Create bookmarks, captions and cross referencing, adding hyperlinks, adding sources and compiling and bibliography; Mail merge: Creating and editing your main document and data source, sorting and filtering merged documents and using merge instructions like ask, fill-in and if-then-else; Linking and embedding to keep things together.

**Unit 4: Databases (4 Weeks)**

Introduction to Database Development: Database Terminology, Objects, Creating Tables, working with fields, understanding Data types, Changing table design, Assigning Field Properties, Setting Primary Keys, using field validation and record validation rules, Indexing, working with multiple tables, Relationships & Integrity Rules, Join Properties, Record manipulation, Sorting & Filtering; Select data with queries: Creating Query by design & by wizard (Select, Make Table, Append, Delete, Cross Tab, Update, Parameterized Query, Find Duplicate and Find Unmatched), Creating multi table queries, creating & working with table joins. Using operators & expressions: Creating simple & advance criteria; Working with forms: Creating Basic forms, working with bound, unbound and calculated controls, understanding property sheet, Working with Data on Forms: Changing Layout, creating Sub Forms, creating list box, combo box and option groups; Working with Reports: Creating Basic Reports, Creating Header & Footer, Placing Controls on reports, sorting & grouping, Creating Sub reports.

**Essential/recommended readings**

- Swinford, E., Dodge, M., Couch, A., Melton, B. A. (2013). Microsoft Office Professional 2013. United States: O'Reilly Media.
- Wang, W. (2018). Office 2019 For Dummies. United States: Wiley. Microsoft Lambert, J. (2019). Microsoft Word 2019 Step by Step. United States: Pearson Education.

**Suggestive readings**

- Jelen, B. (2013). Excel 2013 Charts and Graphs. United Kingdom: Que.
- Alexander, M., Jelen, B. (2013). Excel 2013 Pivot Table Data Crunching. United Kingdom: Pearson Education.
- Alexander, M., Kusleika, R. (2018). Access 2019 Bible. United Kingdom: Wiley.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 Marks

Practical Exam (Internal): 25 Marks

End Semester University Exam: 50 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC 10 – : ADVANCED SPREADSHEETS TOOLS

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		<b>Students should have basic knowledge of excel</b>

### Learning Objectives

The Learning Objectives of this course are as follows:

- To enable the students to use Excel for advanced data analysis
- To equip the students to with automation skills on excel
- To enable the students to use excel for informed decision making.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to make meaningful representations of data in the form of charts and pivot tables.
- By studying this course, students will be able to draw analysis on data using spreadsheets and use interpretation to make decisions.
- By studying this course, students will be able to generate word documents with appropriate formatting, layout, proofing.
- By studying this course, students will be able to manage data for generating queries, forms and reports in a database.

### SYLLABUS OF SEC-10

#### **Unit 1: Excel Advanced Techniques**

**(3 Weeks)**

Templates, Efficiency, and Risk (Standard Deviation, Variance, and Coefficient of Variation), Data Validation; \*Functions and Power functions, Array Formulae (Frequency Distribution, mode.mult, mode.sngl), Tables, Advanced Range Names, What-if-analysis: Goal-seek, Data tables, and Scenario Manager; Data analysis ToolPak: Descriptive Statistics, Moving averages, Histogram, Covariance, correlation, and Regression analysis (only for projection); solver add-

in. Problem Solving using Solver (optimal product mix, workforce scheduling, transportation,



capital budgeting, financial planning), Integrating excel with other tools: MS word, outlook, PowerPoint, Access, Power BI.

**Unit 2: Excel Interactivity and Automation (4 Weeks)**

Index and Match, Offset, Dynamic Charting, Database functions, Text functions, and Error functions: IfError, IsError, Aggregate, Circular Reference, Formula Auditing, Floating-Point Errors, Form Controls (Button, Combo, Check box, Spinner, List, Option), Visual Basic (only basic). Recording Macros, Absolute and relative macros, editing macros, Use of spinner buttons and command buttons; Sub Procedure, Function Procedure (creating New Functions); Working with Loops: Do\_while loop, For\_Next loop; Creating User Forms: Message Box, Input Box; If\_Then\_Else.

**Unit 3: Introduction to VBA (4 Weeks)**

Conditional Formatting, Charts that Inspire (Waterfall, Column, Line, Combo, Thermometer, Scatter, Histogram) Slicers, Sparklines, Graphics Tricks and Techniques, Worksheet Automation using Macros: Absolute and relative macros, editing macros, Creating new functions using macros, Use of spinner buttons and command buttons.

**Unit 4: Data Analysis and Decision-Making (4 Weeks)**

Working with External Data, Advanced Uses of PivotTables, PowerPivot, Reporting with PowerPivot, Power query, Dashboard, Creating a spreadsheet in the area of: Loan and Lease statement; Ratio Analysis; Payroll Accounting; Capital Budgeting (NPV & IRR), Portfolio Management, Breakeven analysis, and Sensitivity analysis; Operations Management: Constraint, Forecasting & Trend Analysis optimization, Assignment Problems; Depreciation Accounting (Single Method); Graphical representation of data; Frequency distribution and its statistical parameters; Correlation and Regression Analysis

**Essential/recommended readings**

- Excel 2016 Power Programming with VBA, Michael Alexander, Dick Kusleika, Wiley.
- Financial Analysis and Modelling Using Excel and VBA, Chandan Sengupta, Second Edition, Wiley Student Edition.
- MS Excel 2016, Data Analysis & Business Modelling, Wayne Winston, PHI.

**Suggestive readings**

- Microsoft Excel 2016 - Data Analysis and Business Modelling Paperback – 1 May 2017 Wayne L. Winston, Microsoft Press.
- Microsoft Excel Practical Formulae: From Basic Data Analysis to Advanced Formulae
- Manipulation Diane Griffiths.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 Marks

Practical Exam (Internal): 25 Marks

End Semester University Exam: 50 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC –11 : FINANCIAL DATABASE AND ANALYSIS SOFTWARE

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		<b>Basic Knowledge of Statistics is required</b>

### Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students to obtain data from financial database.
- To enable to use R language for statistical & econometric data analysis.
- To develop skills that can help in solving your research problems.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the utility of a financial database
- After studying this course, students will be extract data from financial database (Prowess IQ)
- After studying this course, students will be perform data analysis using R
- After studying this course, students will be apply 'R' and ProwessIQ in financial analysis and research.

### SYLLABUS OF SEC-11

#### **Unit I (Financial Database)**

**(3 weeks)**

An Introduction to financial database ProwessIQ from CMIE: Creating company set-, creating spreadsheets, use of elements in Ribbons – Company address and identity indicators, business segments and products, Ownership structure and governance indicators, Financial Statements, Stock prices and capital changes, Capex and M&A, indices and index number. Formulating queries and advance queries Student is expected to be able to extract different types of data for an index, an industry and company data Selection of company/s, period to be studied. Data extraction from balance sheet, profit & loss statement and cash flow statements Stock market data- price and volume, BSE/NSE, adjusted prices Saving and exporting data to a spreadsheet

for further analysis.

## Unit II (Fundamentals of R)

(4 weeks)

Overview of the R language, Input and output of data in R, Help command and Directory in R, In-built functions in R, Operators in R; Assignment, Arithmetic, logical, and Relational operators, Using R studio, Scripts, Text editors for R, Graphical User Interfaces (GUIs) for R, installing packages and libraries, Variable classes (numeric, character, logical, complex, missing), Data Types in R; Vectors, Matrices, Arrays, Lists, Factors, and Data Frames, Important operations of these Data Types, Using data from external files- reading & writing data to external files, Creating and storing R workspaces.

## Unit III (Descriptive Analysis and Data Visualizations)

(4 weeks)

Data preparation; Data cleaning and Missing value treatment, Data Exploration and Manipulation, Data Visualization; Bar chart, pie chart, Histogram, Frequency curve, Scatter plot, Box & Whisker plot etc., Important R functions for Describing a data; Mean, Median, Range, Standard deviation, Variance, Five number summary, Correlation coefficients for a bivariate data.

## Unit III (Predictive Analysis)

(4weeks)

Simple and Multiple Regression using R, Estimating Regression Equation by Ordinary Least Squares in R, Violations of Classical Assumptions: multicollinearity, heteroscedasticity, autocorrelation and model specification errors, their identification, their impact on parameters; tests related to parameters and impact on the reliability and the validity of inferences in case of violations of Assumptions; methods to take care of violations of assumptions, goodness of fit. Time Series Analysis using R (Basic idea only).

### Essential/recommended readings

- Gardener, M., *Beginning R: The Statistical Programming Language*, Wiley & Sons. 2018
- Wickham, H., et al. *R for Data Science: Import, Tidy, Transform, Visualize, and ModelData*, O'Reilly', 2017
- Motwani, B., *Data Analytics with R*, Wiley & Sons, Indian edition 2021
- Chang, R *Graphics Cookbook- Practical Recipes for Visualizing Data*; O' Reilly Media
- Gujarati, D.N. et al. *Basic Econometrics*, McGraw Hill India, 5e, 2018

### Useful web links

- <https://prowessiq.cmie.com>
- CRAN website: <https://cran.r-project.org/>

3. <https://rstudio.com/products/rstudio/download/> (R studio)

- <http://r-statistics.co>

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 12: Statistics with 'R'

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		Basic course in Statistics

## Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students to handle data in the R software thereby helping them to understand meaningful statistical analysis performed on the data.
- To enable students to extract data, and perform basic statistical operations entailing data analysis such as – data cleaning, data visualisation, data summarisation, and regression amongst others.

## Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to extract and Read data into R, manipulate, and analyse it
- After studying this course, students will be able Tto debug, organize, and comment R code
- After studying this course, students will be able to understand the R environment for downloading, installing, and using packages
- After studying this course, students will be able to do basic programming to write own functions
- After studying this course, students will be able to use loops
- After studying this course, students will be able to create standard and customized graphics
- After studying this course, students will be able to perform basic statistical operations and regression.

## SYLLABUS OF SEC-12

**Unit 1: Data Extraction and Spread Sheet Exploration**

**(3 Weeks)**

Extraction of economics and financial data from Prowessiq, RBI, IMF, World bank or an equivalent financial/economic database. The students should be able to save and export the data to 'R-environment' for further analysis.

## **Unit 2: Basics of R-language**

**(7 Weeks)**

Overview of the R language: Installing R and R Studio : Using R studio, Scripts, Text editors for R, Graphical User Interfaces (GUIs) for R, Creating and storing R workspaces, installing packages and libraries, Mathematical operations.

Data Types in R – Numeric, Integer, Character, Logical, Complex and missing data.  
Data Structures in R

- Vectors – Creation, Arithmetic operations of Vectors, Vector Sub setting, Sorting and Sequencing functions.
- Matrix and Arrays – Creation, Arithmetic Operations of matrix, Sub setting, Use of Drop Function.
- Factors – Converting a vector into factor, assigning levels and labels, ordered Factor.
- List – Creating a list, accessing elements from a list, adding a new element and eliminating an existing element from the list, converting list to vectors.
- Data Frames – Creation of Data Frame, adding new columns, rows and removing columns, accessing column using the \$ sign, importing a data set (important file formats such as csv, txt and spreadsheet), aggregate function and subsetting of dataframes, tapply function, manipulation using dplyr package (select, filter, arrange, mutate and group by function, pipe operator).

Programming Fundamentals: Logical operators, conditional statements (if, else, else if statements in R), While loops, For loops, repeat loops.

Creating functions in R.

Reading data in R (file formats such as csv, txt, and xls), Writing data to external files (file formats such as csv, txt, and xls), writing a table to a file, print function.

## **Unit 3: Basic Statistics and Regression**

**(5 Weeks)**

Summarizing and exploring data: Descriptive statistics (mean, median, mode, variance, skewness, five-point summary), dealing with missing data in R, Data cleaning (dplyr package, tidyr package and pipe operator), Exploratory Data Analysis; data visualization using inbuilt functions and ggplot2 package (pie chart, bar chart, line chart, histogram, box plot, scatter plot, Normal QQ plot).

Regression analysis using R: Regression vs Correlation, Simple and multiple regression, Ordinary least square, Assumptions of classical normal linear regression model (CNLRM), corplot package, car package, lmtest package, scatter plot (using plot function and ggplot2 package) to understand the relationship between variables, lm, abline, predict, resid function, interpreting 'summary table' of the regression model, normality of residuals (qqnorm and qqPlot functions), multicollinearity (correlation matrix, corplot and vif function), autocorrelation (acf plot and Durbin Watson test),

heteroscedasticity (graphically, bptest, ncvTest), impact on estimates and inferences in case of violations of assumptions of CNLRM, methods to take care of violations.

Time series data, components of a time series data, additive and multiplicative time series model, ts function, diff function, plot of a time series data, time series data with linear trend; regression analysis using 'lm' function, stationarity in time series (concept only).

### Essential/recommended readings

- Gardener, M. (2018), Beginning R: The Statistical Programming Language, Wiley & Sons.
- Sekhar, S.R.M., et al. (2017), Programming with R, Cengage Learning India.
- Wickham, H., et al. (2017), R for Data Science: Import, Tidy, Transform, Visualize, and Model Data, O'Reilly'.
- Field, A., Miles, J and Field (2012), Z. Discovering Statistics using R (Indian Reprint 2022), SAGE
- SimpleR - Using R for Introductory Statistics: John Verzani.
- The R Guide.
- Analysis of Epidemiological Data Using R and Epicalc: Virasakdi Chongsuvivatwong.
- Statistics Using R with Biological Examples: Kim Seefeld and Ernst Linder.
- An Introduction to R: Software for Statistical Modeling & Computing: Petra Kuhnert and Bill Venables.
- Gujarati, D.N. et al (2018), Basic Econometrics, McGraw Hill India, 5th Ed.
- CRAN website: <https://cran.r-project.org/>
- <https://prowessiq.cmie.com>,
- <https://data.worldbank.org/indicator>,
- [https://rstudio.com/products/rstudio/download/\(Rstudio\)](https://rstudio.com/products/rstudio/download/(Rstudio))
- <http://r-statistics.co>

### Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.



## SEC – 13 : STATISTICAL SOFTWARE PACKAGE

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>			<b>2</b>		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with data analysis using a statistical software package like SPSS or any other equivalent.
- To provide skills for research analysis and increase employability.
- To lay a foundation for advance data analysis work and higher education.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand basic functions of statistical software package for managing variables and generate descriptive statistics to describe the data and analyze data through graphs and charts.
- After studying this course, students will be able to test differences in sample means.
- After studying this course, students will be able to identify relationships between variables and develop models for predicting dependent variables on the basis of independent variables.
- After studying this course, students will be able to understand data structures and identify clusters in data.
- After studying this course, students will be able to identify principal components that are relevant from a host of variables.

### SYLLABUS OF SEC-13

#### **Unit 1: Getting started with the Software**

**(4 Weeks)**

Introduction: Data Entry, Storing and Retrieving Files, Generating New Variables; Managing Data – Listing cases, replacing missing values, computing new variables, recoding variables, selecting cases, sorting cases, merging files, Graphs – Creating and

editing graphs and charts; Descriptive Statistics Procedures: Frequencies, Descriptive, Explore, Cross Tabulation.

**Unit 2: Hypothesis Testing for Means (3 Weeks)**

T-tests: One sample test, Independent samples and paired samples t-test; ANOVA – One-way analysis of variance with post hoc analysis, Two-way analysis of variance.

**Unit 3: Testing for Association between Variables (4 Weeks)**

Chi-square Test of Independence; Bivariate Correlation Analysis: Simple Scatter Plot; Correlation Coefficient: Pearson, Spearman Rho and Kendall Tau Coefficient. Factor analysis.

**Unit 4: Regression Analysis (4 Weeks)**

Linear Regression: Simple Linear Regression, Multiple regression analysis with matrix scatterplot. Multiple Regression: Standard (Enter) and Stepwise Method. Binary Logistic Regression.

**Essential/recommended readings**

- Performing Data Analysis using IBM SPSS, Lawrence S. Meyers, Glenn C. Gamst, A. J. Guarino, Wiley Publication
- SPSS for Windows Step by Step A Simple Guide and Reference, Darren George and Paul Malley
- SPSS in Simple Steps, Kiran Pandya, Smruti Bulsari, Sanjay Sinha, Dreamtech Press

**Suggestive Readings**

Using SPSS in Research, Dr. Radha Mohan, Neelkamal.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 14: Essentials of Python

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

## Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce programming concepts using python
- To use python programming to solve problems of different domains

## Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the basics of programming language
- After studying this course, students will be able to develop, document and debug modular python programs
- After studying this course, students will be able to apply suitable programming constructs and built in data structures to solve a problem

## SYLLABUS OF SEC-14

## Unit I

(3 weeks)

**Introduction**

What can Python do? Why Python? Python Syntax compared to other programming languages, Python Installation.

The print statement, Comments, Python Data Structures & Data Types, String Operations in Python, Simple Input & Output, Simple Output Formatting, Operators in python

**Python Program Flow**

Indentation, The If statement and its' related statement, An example with if and it's related statement, The while loop, The for loop, The range statement, Break &Continue, Assert, Examples for looping

**Functions& Modules**

Create your own functions, Functions Parameters, Variable Arguments, Scope of a Function, Function Documentations, Lambda Functions& map, n Exercise with functions, Create a Module, Standard Modules

## Unit 2

(4 weeks)

### Exceptions Handling

Errors, Exception handling with try, handling Multiple Exceptions, Writing your own Exception

### File Handling

File handling Modes, Reading Files, Writing& Appending to Files, Handling File Exceptions, The with statement

### Classes In Python

New Style Classes, Creating Classes, Instance Methods, Inheritance, Polymorphism, Exception Classes & Custom Exceptions

### Generators and iterators

Iterators, Generators, The Functions any and all, With Statement, Data Compression

## Unit 3

(5 weeks)

### Data Structures

List Comprehensions, Nested List Comprehensions, Dictionary Comprehensions. Functions, Default Parameters, Variable Arguments, Specialized Sorts

### Collections

namedtuple(), deque, ChainMap, Counter, OrderedDict, defaultdict, UserDict, UserList, UserString

### Writing GUIs in Python (Tkinter)

Introduction, Components and Events, An Example GUI, The root Component, Adding a Button, Entry Widgets, Text Widgets, Check buttons

### Python SQL Database Access

Introduction, Installation, DB Connection, Creating DB Table, INSERT, READ, UPDATE, DELETE operations, COMMIT & ROLLBACK operation, handling Errors

### Network Programming

Introduction, A Daytime Server, Clients and Servers, The Client Program, The Server Program

### Date and Time

Sleep, Program execution time, more methods on date/time

**Unit 4**

**(4 weeks)**

Filter, Map, Reduce, Decorators, Frozen set, Collections

**Regular Expression**

Split, Working with special characters, date, emails, Quantifiers, Match and find all, character sequence and substitute, Search method

**Threads ESSENTIAL**

Class and threads, Multi-threading, Synchronization, Treads Life cycle, use cases

**Accessing API ESSENTIAL**

Introduction, Facebook Messenger, Openweather

**DJANGO**

Django Overview, Django Installation, Creating a Project, Usage of Project in depth Discussion, Creating an Application, Understanding Folder Structure, Creating a Hello World Page, Database and Views, Static Files and Forms, API and Security

**Essential/recommended readings**

- "Starting Out with Python plus My Programming Lab with Pearson eText --Access Card Package (3rd Edition) Tony Gaddis ISBN-13: 978-0133862256".
- Python Crash Course: A Hands-On, Project-Based Introduction to Programming (2nd Edition).
- Head-First Python: A Brain-Friendly Guide (2nd Edition) by Paul Barry.
- Learn Python the Hard Way: 3rd Edition by Zed A. Shaw.
- Python Programming: An Introduction to Computer Science (3rd Edition) by John M. Zelle.
- Python Cookbook: Recipes for Mastering Python 3 (3rd Edition) by Brian Jones and David Beazley
- <https://docs.djangoproject.com/>
- Introduction to Programming using Python by Y. Daniel Liang. Publisher Pearson
- Taneja, S., Kumar, N. Python Programming- A modular Approach, Pearson Education India, 2018.
- Balaguruswamy E., Introduction to Computing and Problem Solving using Python, 2 nd edition, McGraw Hill Education, 2018

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 15: Programming using Python

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		Experience with a high-level language (C/C++, Java, MATLAB) is suggested. Prior knowledge of a scripting language (Perl, UNIX/Linux shells) and Object-Oriented concepts is helpful but not mandatory.

## Learning Objectives

The Learning Objectives of this course are as follows:

- To provide exposure to basic problem-solving techniques with computers
- To develop logical thinking abilities and to propose novel solutions for real world problems through programming language constructs.
- To deepen the empirical knowledge on applying programming on business domains.

## Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to interpret the basic representation of the data structures and sequential programming
- After studying this course, students will be able to gain knowledge of, and ability to use control framework terminologies.
- After studying this course, students will be able to work out using the core data structures as lists, dictionaries, tuples, and sets.

- After studying this course, students will be able to choose appropriate programming paradigms, interrupt and handle data using files to propose solutions through reusable modules.
- After studying this course, students will be able to propose possible error-handling constructs for unanticipated states/inputs .
- After studying this course, students will be able to implements exemplary applications on real-world problems.

## SYLLABUS OF SEC-15

### **Unit-1: Introduction (4 weeks)**

Relationship between computers and programs, Basic principles of computers, File systems, Using the Python interpreter, Introduction to binary computation, Input / Output

### **Unit-2: Data types and control structures (4 weeks)**

Operators (unary, arithmetic, etc.), Data types, variables, expressions, and statements, Assignment statements, Strings and string operations, Control Structures: loops and decision

### **Unit-3: Modularization and Classes (4 weeks)**

Standard modules, Packages, Defining Classes, Defining functions, Functions and arguments(signature)

### **Unit-4: Data structures and Object-oriented design (4 weeks)**

Data Structures (array, List, Dictionary), Error processing, Exception Raising and Handling Programming types, Object Oriented Programming, Object Oriented Design, Inheritance and Polymorphism

## Practical Exercises

- Running instructions in Interactive interpreter and a Python Script
- Write a program to purposefully raise Indentation Error and Correct it
- Write a program to compute distance between two points taking input from the user. (Pythagorean Theorem)
- Write a program add.py that takes 2 numbers as command line arguments and prints its sum.
- Write a Program for checking whether the given number is an even number or not.
- Using a for loop, write a program that prints out the decimal equivalents of 1/2, 1/3, 1/4, 1/10
- Write a program using a for loop that loops over a sequence. What is the sequence?
- Write a program using a while loop that asks the user for a number, and prints a countdown from that number to zero.
- Find the sum of all the primes below two million. Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be: 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, ...
- By considering the terms in the Fibonacci sequence whose values do not exceed four million, find the sum of the even-valued terms.

- Write a program to count the numbers of characters in the string and store them in a dictionary data structure.
- Write a program to use split and join methods in the string and trace a birthday with a dictionary data structure.
- Write a program combining lists that combines these lists into a dictionary.
- Write a program to count the frequency of characters in a given file. Can you use character frequency to tell whether the given file is a Python program file, C program file or a text file?
- Write a program to print each line of a file in reverse order.
- Write a program to compute the number of characters, words and lines in a file.
- Write a function ball collide that takes two balls as parameters and computes if they are colliding. Your function should return a Boolean representing whether or not the balls are colliding. Hint: Represent a ball on a plane as a tuple of (x, y, r), r being the radius. If (distance between two balls centers)  $\leq$  (sum of their radii) then (they are colliding)
- Find mean, median, mode for the given set of numbers in a list.
- Write a function nearly equal to test whether two strings are nearly equal. Two strings a and b are nearly equal when a can be generated by a single mutation on b.
- Write a function dups to find all duplicates in the list.

### Essential/recommended readings

- "Starting Out with Python plus My Programming Lab with Pearson eText --Access Card Package (3rd Edition) Tony Gaddis ISBN-13: 978-0133862256".
- Python Crash Course: A Hands-On, Project-Based Introduction to Programming (2nd Edition).
- Head-First Python: A Brain-Friendly Guide (2nd Edition) by Paul Barry.
- Learn Python the Hard Way: 3rd Edition by Zed A. Shaw.
- Python Programming: An Introduction to Computer Science (3rd Edition) by John M. Zelle.
- Python Cookbook: Recipes for Mastering Python 3 (3rd Edition) by Brian Jones and David Beazley.

### Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.



## SEC – 16: ANALYTICS / COMPUTING WITH PYTHON

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>			<b>2</b>		<b>Basic course of Python</b>

### Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce machine learning techniques to students using Python programming
- To enable students to use various tools and packages for advanced data analysis

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to learn about Python's main features and how they make Python a great tool for financial analysts.
- After studying this course, students will be able to get familiarized with Anaconda and Jupyter Notebook.
- After studying this course, students will be able to learn basics of Machine learning.
- After studying this course, students will be able to apply these techniques on data.

## SYLLABUS OF SEC-16

### **Unit I**

**(5 weeks)**

Python: General overview, Python vs. Excel , Anaconda and Jupyter notebook: Interface overview, Data types in Python, Python basic syntax: Assignment statements, creating variables, indentation, conditionals, and loops, writing user defined functions. Working with libraries: Pandas, NumPy, Matplotlib, and Seaborn. Python SQL Database Access: Introduction, Installation, DB Connection, Creating DB Table.

### **Unit II**

**(5 weeks)**

Pandas: Working with Data Frame, Importing from Excel or .csv files, Powerful filters and indexes. Numpy: Selecting data with loc and iloc, Using NumPy for speed, Trade-offs between arrays and lists, Array functions. Data cleansing and normalization: Libraries for data visualization, Types of charts/graphs and how to build them.

**Unit III**

**(5 weeks)**

Machine learning: Introduction, Definitions, Supervised, unsupervised, python libraries for machine learning: Sci-kit learn, Regression: Linear regression, logistic regression, over-fitting and regularization.

**Essential/recommended readings**

- Pilgrim, M. (2004). Dive Into Python. Apress. Ch. 1,2,4
- S Raschka, Python Machine Learning, V Mirjalili (2020), Ch 3
- Mitchell, T. M. (1997). Machine Learning. New York: McGraw-Hill.

**Suggestive Readings**

- Liu, Y. (2019). Python machine learning by example: Implement machine learning algorithms and techniques to build intelligent systems (Second edition.). Packt Publishing.
- Boschetti, A. (2016). Regression Analysis with Python (1st ed.). Packt Publishing. Retrieved from <https://www.perlego.com/book/4457/regression-analysis-with-python-pdf> (Original work published 2016)
- Sivanandam, S.N., & Deepa, S.N. (2011). Principles of soft computing.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 17: Business Intelligence and Data Visualisation

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>			<b>2</b>		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To understand data and generate insights from it is by visualising it using a range of data visualization tools available.
- To understand large volume of data, discover trends, communicate effectively with all stakeholders and influence decisions.
- To develop Business Analytics skillset about how to create effective charts and interactive dashboards is extremely useful

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand and describe the main concepts of data visualization
- After studying this course, students will be able to determine the right type of graph for different types of data available or provided through hands on experience with handling real data sets
- After studying this course, students will be able to read reports, charts, graphs, figures, maps and derive meaning from them
- After studying this course, students will be able to create reports, data visualizations, and dashboards using Power BI and Tableau
- After studying this course, students will be able to understand how to automate tasks, perform ETL, create data models, perform computations, and present insights using data visualization and dashboards.

## SYLLABUS OF SEC-17

### Unit-1 (POWER BI) (6 weeks)

**DATA PREPARATION-** Connecting to different data sets, Basic data prep and model on Power Query, Drill down and Tooltip, AI visuals (Q&A, Analyze, Decomposition)

**DATA VISUALIZATION AND DASHBOARDS-** Inbuilt visuals, Custom visuals, Learn from existing reports, Visualization as a Tooltip, Final dashboard – putting it together Filter, slicer, bookmarks, buttons

### Unit-2 (POWER BI) (6 weeks)

**PERFORMING COMPUTATIONS** - Combine multiple files and folders, Merge and append, Custom calculations Conditional columns, Column from examples, Advanced Editor.

**DAX** - Introduction to Measures, Calculated Columns vs Quick Measures, Creating a Date Table, Time Intelligence Functions

**POWER BI SERVICE** - Publishing to Power BI Service, Power BI dataflows, Dashboards and Cross-Reporting

### Unit- 3 (TABLEAU) (4 weeks)

**VISUALIZATIONS-** Introduction to Dimensions and Measures, Bar Chart, Line Chart, Table, Heat Map, Treemap, Packed Bubble, Tooltip

**CALCULATIONS-** Calculated Fields, Parameters, Introduction to Level of Detail (LOD)

**FINAL DASHBOARD-** Animations, Tooltips, Dashboard and Stories

### Essential/recommended readings

- The Definitive Guide to DAX – 2nd Edition  
Marco Russo Alberto Ferrari
- M Is for (Data) Monkey: A Guide to the M Language in Excel Power Query  
Ken Puls & Miguel Escobar
- Tableau Your Data! Fast and Easy Visual Analysis with Tableau Software by Daniel G. Murray. 1st Edition, WILEY.
- Steve Wexler, Jeffrey Shaffer, Andy Cotgreave: The Big Book of Dashboards – visualizing your data using real world business scenarios; Wiley
- Ryan Sleeper: Practical Tableau
- Cole Nussbaumer Knaflic : Storytelling with data- a data visualization guide for business professionals ; Wiley
- Visualize This: The Flowing Data Guide to Design, Visualization, and Statistics by Nathan Yau. 1st Edition

### Useful Weblinks

- <https://docs.microsoft.com/en-us/power-bi/>
- <https://powerbi.microsoft.com/en-us/customer-showcase/>
- <https://powerquery.microsoft.com/en-us/>
- <https://www.sqlbi.com/>

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 18: Digital Marketing

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

## Learning Objectives

The Learning Objectives of this course are as follows:

- To acquaint the students with the knowledge of growing integration between the traditional and digital marketing concepts and practices in the digital era.
- To familiarize the students with the tools and techniques used by the digital marketers for driving the marketing decisions to attain marketing objectives.

## Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the concept of digital marketing and its integration with traditional marketing.
- After studying this course, students will be able to understand customer value journey in digital context and behaviour of online consumers.
- After studying this course, students will be able to understand email, content and social media marketing and apply the learnings to create digital media campaigns.
- After studying this course, students will be able to examine various tactics for enhancing a website's position and ranking with search engines.
- After studying this course, students will be able to leverage the digital strategies to gain competitive advantage for business and career.

## SYLLABUS OF SEC-18

### **Unit 1: Marketing in the Digital World** (3 weeks)

Digital marketing: Concept, Features, Difference between traditional and digital marketing, Moving from traditional to digital Marketing; c

Digital Marketing Channels: Intent Based- SEO, Search Advertising; Brand Based- Display Advertising; Community Based-Social Media Marketing; Others- Affiliate, Email, Content, Mobile.

Customer Value Journey: 5As Framework; The Ozone O3 Concept Key; Traits of online consumer

### **Unit 2: Content and Email Marketing** (2 weeks)

Content Marketing: Step-by-step Content Marketing Developing a content marketing strategy Email Marketing: Types of Emails in email marketing, Email Marketing best practices

### **Unit 3: Social Media Marketing and Display Marketing** (5 weeks)

Social Media Marketing: Building Successful Social Media strategy; Social Media Marketing Channels; Facebook, LinkedIn, YouTube (Concepts and strategies)

Display Advertising: Working of Display Advertising; Benefits and challenges; Overview of Display ad Process.; Define- Customer, Publisher, Objectives; Format-Budget, Media, Ad Formats, Ad Copy.

### **Unit 4 Search Engine Marketing** (6 weeks)

Introduction of SEM: Working of Search Engine; SERP Positioning; online search behaviour, DMI's 5P Customer Search Insights Model.

Search Engine Optimization: Overview of SEO Process; Goal Setting-Types.

On-Page Optimization: Keyword Research, SEO Process -Site Structure, Content, Technical Mechanics, Headings, Image & Alt text, Social Sharing, Sitemaps, Technical Aspects- Compatibility, Structured Data Markup.

Off Page Optimisation: Link Formats, Link Building, Content Marketing, Social Sharing; Black and White Hat Techniques

Search Advertising: Overview of PPC Process; Benefits of Paid Search; Basis of Ranking; Goal Setting-Objectives; Account Setting-Creation of Google Ads, Campaign architecture, Campaign setup, Targeting, Bid Strategy, Delivery, Ad Scheduling, Ad Rotation, Keyword Selection; Ad Copy composition, Ad Extension

### **Essential/recommended readings**

- Dodson, I. (2016). The art of digital marketing: the definitive guide to creating strategic, targeted, and measurable online campaigns. John Wiley & Sons.
- Kartajaya, H., Kotler, P., & Setiawan, I. (2016). Marketing 4.0: moving from traditional to digital. John Wiley & Sons.
- Ryan, Damien: Understanding Digital Marketing - Marketing Strategies for Engaging the Digital Generation. Kogan Page Limited.

### **Suggested Readings**

- Moutusy Maity: Internet Marketing: A practical approach in the Indian Context: Oxford Publishing
- Seema Gupta: Digital Marketing: Mcgraw Hill
- Ultimate guide to digital Marketing by Digital Marketer

### **Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.



## SEC – 19: Big Data Analytics

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		Basic knowledge of Python/Java

### Learning Objectives

The Learning Objectives of this course are as follows:

- To Understand the Big Data Platform and its Uses
- Provide an overview of Apache Hadoop
- Provide HDFS Concepts and Interfacing with HDFS.
- Provide hands on Hadoop Eco System
- To understand spark framework

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to identify Big Data and its Business Implications.
- After studying this course, students will be able to list the components of Hadoop and Hadoop Eco-System.
- After studying this course, students will be able to access and process data on distributed file system,
- After studying this course, students will be able to manage job execution in Hadoop environment.
- After studying this course, students will be able to develop Big Data Solutions using Hadoop Eco System.

### SYLLABUS OF SEC-19

**Unit 1: Fundamentals of Big Data Analysis**

**(4 weeks)**

Data Storage and Analysis, Characteristics of Big Data, Big Data Analytics, Typical Analytical Architecture, Requirement for new analytical architecture, Challenges in Big Data Analytics – Need of big data frameworks

**Unit 2: Hadoop Framework (4 weeks)**

Hadoop, Requirement of Hadoop Framework, Design principle of Hadoop –Comparison with other system, Hadoop Components – Hadoop 1 vs Hadoop 2, Hadoop Daemon's – HDFS Commands, Map Reduce Programming: I/O formats, Map side join, Reduce Side Join, Secondary sorting, Pipelining Map Reduce jobs

**Unit 3: HDFS (Hadoop Distributed File System) (4weeks)**

The Design of HDFS, HDFS Concepts, Command Line Interface, Hadoop file system interfaces, Data flow, Data Ingest with Flume and Scoop and Hadoop archives, Hadoop I/O: Compression, Serialization, Avro and File-Based Data structures.

**Unit 4: Spark Framework and Data Analysis with Spark Shell (4 weeks)**

Introduction to GPU Computing, CUDA Programming Model, CUDA API, Simple Matrix, Multiplication in CUDA, CUDA Memory Model, Shared Memory Matrix Multiplication, Additional CUDA API Features. Writing Spark Application - Spark Programming in Scala, Python, R, Java - Application Execution.

**Practical Exercises**

- Downloading and installing Hadoop.
- Understanding different Hadoop modes. Startup scripts, Configuration files.
- Hadoop Implementation of file management tasks, such as Adding files and directories, retrieving files and Deleting files.
- Run a basic word count Map reduce program to understand map reduce paradigm: To count words in a given file, to view the output file, and to calculate the execution time.
- Map Reduce Program to analyse time-temperature statistics and generate report with max/min temperature.
- Implement of Matrix Multiplication with Hadoop Map Reduce.
- Implementation of K-means clustering using Map Reduce.
- To study and implement basic functions and commands in R programming.
- To build Word cloud, a text mining method using R for easy to understand and visualization than a table data.
- To implement clustering program using R programming

**Essential/recommended readings**

- Seema Acharya, Subhasini Chellappan, "Big Data Analytics" Wiley 2015.
- Mike Frampton, "Mastering Apache Spark", Packt Publishing, 2015.

- Tom White, “Hadoop: The Definitive Guide”, O’Reilly, 4th Edition, 2015.
- Nick Pentreath, Machine Learning with Spark, Packt Publishing, 2015.
- Mohammed Guller, Big Data Analytics with Spark, Apress, 2015.
- Donald Miner, Adam Shook, “Map Reduce Design Pattern”, O’Reilly, 2012

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 20: Back-End Web Development

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>			<b>2</b>		

### Learning Objectives

The Learning Objective of this course is as follows:

- To introduce the basic concepts and techniques of server side web programming.
- To enable the students to apply the basic concepts and techniques of server side web programming.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to build interactive and dynamic websites.
- After studying this course, students will be able to write the server side programming techniques with Django for accessing the contents to/from the server
- After studying this course, students will be able to learn to validate server-side/backend data
- After studying this course, students will be able to use GET and POST methods for sending data within client and server.

### SYLLABUS OF SEC-20

#### **Unit 1**

**(7 weeks)**

Installation of Django ,Introduction to Django;;Model–view–controller(MVC) model; Django structure; HTML templates; URL dispatcher ,Django Template System, Interacting with a Database

**Unit 2**

**(7 weeks)**

The Django Administration Site , Wrapper Functions, Custom Views GET and POST methods ;Deployment of Django; Automating tasks with Django; Building Web APIs using Django REST

**Project work**

Build a website for student admission in a college/university.

**Essential/recommended readings**

- <https://docs.djangoproject.com/>

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 21: Front End Web Design and Development

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>			<b>2</b>		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the basic concepts and techniques of client-side web programming.
- To enable the students to develop simple, interactive, and stylish websites using HTML, CSS and JavaScript.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to build websites using the elements of HTML.
- After studying this course, students will be able to build interactive and stylish websites using the client side programming techniques with CSS and Javascript.
- After studying this course, students will be able to learn to validate client-side data.
- After studying this course, students will be able to define the structure and contents of the website using different features of CSS.

### SYLLABUS OF SEC-21

#### **Unit 1** **(4 weeks)**

**Introduction:** Introduction to internet and web design. Basic concepts of webarchitecture.

#### **Unit 2** **(4 weeks)**

**HTML:** Introduction to hypertext mark-up language (html), creating web pages, lists, hyperlinks, tables, web forms, inserting images, frames.

#### **Unit 3** **(4 weeks)**

**Cascading style sheet (CSS):** Concept of CSS, creating style sheet, Importing style sheets, CSS properties, CSS styling (background, text format, controlling fonts), CSS rules, Style

Types, CSS Selectors, CSS cascade, working with block elements and objects, working with lists and tables, CSS id and class, box model (introduction, border properties, padding properties, margin properties).

#### Unit 4

(4 weeks)

**Basics of Javascript:** Document object model, data types and variables, functions, methods and events, controlling program flow, built-in objects and operators, validations.

### Practical Exercises

#### HTML

- Create an HTML document with following formatting – Bold, Italics, Underline, Colors, Headings, Title, Font and Font Width, Background, Paragraph, Line Brakes, Horizontal Line, Blinking text as well as marquee text.
- Create an HTML document with Ordered and Unordered lists, Inserting Images, Internal and External linking
- Create an HTML document for displaying the current semester’s timetable.
- Create a website with horizontal and vertical frames. Top horizontal frame needs to show your college’s name and logo. Bottom horizontal frame is to be split into two vertical frames. The left frame has hyperlinks to pages related to faculty, courses, student activities, etc. The right frame shows the corresponding webpage based on the link clicked on the left frame.
- Create a student registration form using HTML which has the following controls and make an interactive content presentation using CSS.:
  - I. Text Box
  - II. Dropdown box
  - III. Option/radio buttons
  - IV. Check boxes
  - V. Reset and Submit button
- Create a webpage for your department with a drop-down navigation menu for faculty, courses, activities, etc.. Implement the webpage using styles, rules, selectors etc. learned in CSS
- Write event-driven programs in JavaScript for the following:
  - Enter a number and on click of a button print its multiplication table.
  - Print the largest of three numbers entered by the user.
  - Find the factorial of a number entered by the user.
  - Enter a list of positive numbers using the prompt terminated by a zero. Find the sum and average of these numbers.
- Create a student registration form using text, radio button, check box, drop down box, text field and all other required HTML elements. Customize the CSS and javascript to input and validate all data. Create functions to perform validation of each element, example:
  - a. Roll number is a 7-digit numeric value
  - b. Name should be an alphabetical value (String)
  - c. Non-empty and valid fields like DOB

**Essential/recommended readings**

- Nixon, R., Learning PHP, MySQL & JavaScript with jQuery, CSS and HTML5, O'Reilly, 2018.
- Powell, T.A. HTML & CSS: The Complete Reference, 5th edition, Tata McGrawHill, 2017.
- Duckett, J., JavaScript and JQuery: Interactive Front-End Web Development, Wiley, 2014.

**Suggested Readings**

- Boehm, A., & Ruvalcaba, Z., Murach's HTML5 and CCS, 4th edition, Mike Murach & Associates, 2018.
- Ivan Bayross, Web Enabled Commercial Application Development Using Html, Dhtml, Javascript, Perl CGI, BPB Publications, 2010.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.



## SEC – 22: APP Development using Flutter

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>			<b>2</b>		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To enable the students for developing simple mobile applications that can run on Android, IOS and Web.
- To learn the fundamentals of Flutter platform.
- To enable the students to write cross-platform applications.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to Install and use flutter
- After studying this course, students will be able to use DART language
- After studying this course, students will be able to build a cross-platform APP
- After studying this course, students will be able to deploy application with single codebase.

### SYLLABUS OF SEC-22

#### **Unit 1** **(4 weeks)**

Introduction to Flutter, Flutter – installation, Widgets, Gestures(Title, Body, Layouts, Columns, Root, Run app)

#### **Unit 2** **(4 weeks)**

State Management, Flutter – Introduction To Package, Build method, Dart packages, app bar,

text widgets, Scaffold, Containers, Structuring flutter apps, Using GitHub repos of flutter.

**Unit 3 (4 weeks)**

Flutter – Accessing Rest API, Database Concepts, Testing (Widget Testing).

**Unit 4 (4 weeks)**

Deployment (Android Application On Play Store, IOS Application On APP Store)

**Practical Exercises**

- Build a simple quiz app in flutter for android, ios, and web.
- Build a cross-platform app based on your own idea. Use as many features of flutter as you can.

**Essential/recommended readings**

- <https://docs.flutter.dev/>
- <https://github.com/flutter>

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**SEC – 23: Introduction to Cloud Computing (AWS)**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

**Learning Objectives**

The Learning Objectives of this course are as follows:

- To learn about cloud computing through Amazon Web Services (AWS) platform.
- To learn about AWS cloud concepts, services, security and architecture to build an application.

**Learning outcomes**

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to Understanding cloud computing platform
- After studying this course, students will be able to differentiate between on-premises, hybrid-cloud, and all-in cloud
- After studying this course, students will be able to describe the basic global infrastructure of the AWS Cloud
- After studying this course, students will be able to understanding the core AWS services, including compute, network, databases, and storage

**SYLLABUS OF SEC-23**

**Unit 1**

**(6 weeks)**

Introduction to cloud computing, Creating AWS account, AWS Management Console, AWS Documentation overview, Availability Zones, AWS Global Infrastructure.

**Unit 2**

**(5 weeks)**

Compute in the Cloud :- Amazon EC2, instance types.

**Unit 3**

**(5 weeks)**

Storage and Databases: - Amazon Simple Storage Service (Amazon S3), Amazon Relational Database Service (Amazon RDS), Amazon DynamoDB.

**Project**

Create an AWS account and implement AWS cloud for deploying any application.

**Suggested Weblinks**

- <https://aws.amazon.com>

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**SEC –24: Introduction to Blockchain**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>			<b>2</b>		

**Learning Objectives**

The Learning Objectives of this course are as follows:

- To introduce the students to the basic concept of blockchain.
- To make the students learn and implement blockchain technology.
- To learn about the distributed organizations and distributed ledger.

**Learning outcomes**

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand how Ethereum transactions are validated by miners.
- After studying this course, students will be able to understand Ethereum Blockchain.
- After studying this course, students will be able to learn Solidity programming language to develop Smart Contracts.
- After studying this course, students will be able to understand the key concepts like cryptography and public , private blockchain.
- After studying this course, students will be able to gain a deep insight into Ethereum, Hyperledger and its network.

**SYLLABUS OF SEC-24**

**Unit 1** **(8 weeks)**

**Blockchain: Basics And Applications:** Node Fundamentals,Blockchain Basics, Blockchain Features, Ethereum Fundamentals, Smart Contract Development In Ethereum, Dapp Development In Ethereum.

**Unit 2**

**(8**

**weeks)**

**Building A Distributed Application On Hyperledger Fabric:** Hyperledger Fundamentals, Fabric Network Setup, Chaincode Development, DAPP Development.

**CAPSTONE PROJECT**

- **Assignment/Project**

**Suggested Web links**

- <https://ethereum.org>
- <https://www.hyperledger.org/>

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 25: VISUAL COMMUNICATION AND PHOTOGRAPHY

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To synthesize a comprehensive view of principles involved in Visual Communication.
- To appreciate and express the cultural significance of photography as visual art and understand its evolution and purposes.
- To develop an awareness of compositional and organizational strategies for the effective deployment of formal elements of visual art.
- To read visual texts with a deep knowledge of visual history and theory.
- To create an ability of situating the content and form of the visual representation of thematic context.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to acquire knowledge of the cultural and historical importance of the visual medium.
- After studying this course, students will be able to explore the fundamentals and underlying theories of Visual Communication.
- After studying this course, students will be able to develop a thorough knowledge of concepts, and skills in creating photographs.
- After studying this course, students will be able to learn to identify and analyze semiotics in photographs.
- After studying this course, students will be able to develop a craftsmanship in creating aesthetically pleasing photographs

## SYLLABUS OF SEC-25

### **Unit 1: Historical Background and Basics of Visual Communication (4 Weeks)**

Unit Description: The Unit I will give a brief history of the visual arts from the caveman to modern man. Skills of artistic schools of thought and Intertextuality in art in relation to culture.

Topics- Concept and History of Visual Communication, Human Eye and Visual Process, Visual culture and Information Education Communication, Theories of visual communication - Gestalt Theory of visual communication, Perceptual theory of Visual communication, Semiotics and cognitive approach in visuals

### **Unit II: Theories of Visual Communication (4 Weeks)**

Unit Description: This unit will put emphasis on theories, semiotics and the study of signs. Through semiotic theories improve critical thinking skills, and learn to use semiotics to think logically and to analyze visual media in context of culture.

Topics: Fundamentals of Design: Definition. Approaches to Design, Centrality of Design, Elements of Design, Principles of Visual and other Sensory Perceptions. Colour psychology and theory (some aspects), Definition, Optical / Visual Illusions, etc., Various stages of design process, Learning skills to read signs and signifier in visuals for social messaging

### **Unit III: Photography as Visual Communication (4 Weeks)**

Unit Description: This unit will provide skills to learn camera and lighting techniques.

Topics: Introduction to photography, Camera – structure and function of camera , Characteristics of light, Sources of Light – Nature, Artificial and Available, Lighting techniques – three-point lighting, Exposure – focusing, aperture, shutter speed, Depth of field. , Kinds of light indoor and outdoor – Electronic flash and artificial lights, Light meters

### **Unit IV: Camera Compositions and Accessories (4 Weeks)**

Unit Description: This unit will provide skills about camera accessories and designing aesthetically rich compositions.

Topics: Camera lenses and accessories, Basic shots, angle, and view, Composition, Role of photographic image in visual communication, Basics of photojournalism, photo-features, photo - essays, writing captions, visual storytelling.

### **Essential Readings**

- Barnes, Susan B. An Introduction to Visual Communication: From Cave Art to Second Life, Peter Lang Pub, 2011.
- Berger, Arthur Asa, Seeing is Believing: An Introduction to Visual Communication, McGraw-Hill Education, 2012.
- Lester, Paul Martin, Visual Communication: Images with Messages (6ed), Cengage Learning, 2013.
- Photography: A Critical Introduction - edited by Liz Wells London, Routledge, Oxon, 2015.
- Farrell, I. Complete Guide to Digital Photography, Quercus Publishing, UK, 2014.



**Suggested Readings**

- Mandav, Pradeep, Visual Media Communication, Authors Press, 2001.
- Williams, Rich, Visual Communication: Integrating Media, Art, and Science, Routledge, 2007

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**SEC – 26: CAD FOR FASHION**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>			<b>2</b>		

**Learning Objectives**

The Learning Objectives of this course are as follows:

- To understand the concept of fashion sketching and fabric rendering
- To learn different softwares for fashion designing and rendering

**Learning outcomes**

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the basics of garment sketching and fabric rendering manually.
- After studying this course, students will be able to gain the knowledge about various computer design softwares – Adobe Photoshop, CorelDraw, Adobe Illustrator and Open source
- After studying this course, students will be able to learn the application of selected computer design softwares for fashion sketching.
- After studying this course, students will be able to develop proficiency in CAD for the creation of fabric textures and colour schemes.
- After studying this course, students will be able to Design a theme-based fashion collection using computer design software.

## SYLLABUS OF SEC-26

### Unit I: Fashion sketching

(8 weeks)

Unit Description: Fashion sketching plays an important role in designing to preview and visualize designs before sewing actual clothing. Thus, this unit aims to help students develop the skills in designing apparel through flat sketching of garment components both manually and digitally.

Topics: Flat sketching of garment components by hand – necklines, collars, sleeves, skirts, tops, and trousers, Introduction to vector-based drawing softwares – CorelDraw, Adobe Illustrator and open-source software like Inkscape, Introduction to features and tools of CorelDraw/Illustrator/Inkscape, Project - Application of software tools for drawing technical flats on any vector-based computer design software

### Unit II: Fabric rendering

(8 weeks)

Unit Description: This unit will help students to develop skills to render the fabrics and silhouettes used in the garment. Students will be taught to imitate fabric textures in their drawing both manually and through computer aided design softwares. In addition, they will also learn to develop their own textile prints and their colour ways.

Topics: Learning to simulate textures of various fabrics manually - cotton, silk, fur, net, leather, velvet, denim, corduroy, georgette, chiffon, knit, crochet, lace, embroidery and prints. Understanding the basics of design repeat and how to create seamless prints manually. Introduction to raster -based editing softwares –Adobe Photoshop and open-source software like GIMP, Photopea etc.

Introduction to features and tools of Photoshop/Photopea/GIMP

Application of software tools for creating seamless patterns.

Project - Application of software tools for designing various textile products with different fabric textures in three different colour schemes

*All the above work will be collated as a digital portfolio.*

### Essential Readings

- Abling, B., (2019). Fashion Sketchbook, Bloomsbury Publication, UK
- Aldrich, W., (1994). CAD in Clothing and Textiles, 2nd Edition, Wiley- Blackwell Publishing, USA
- Jain, S. & Geetha M. (2018). CorelDraw Training Guide, BPB Publications, India
- Lazear.M. Susan, (2007). Adobe Photoshop for Fashion Design, Pearson Publishing
- Callender, J. (2011). 2000 Pattern Collection, Anova Books Company Limited, London.

### Suggested Readings

- CorelDraw tutorial: <https://www.youtube.com/watch?v=89VZfov7p8Q>
- Photoshop tutorial: <https://helpx.adobe.com/in/photoshop/tutorials.html>
- Shuffle Botham, R., 2014, Photoshop cc, In Easy Steps Limited, UK

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**SEC –27: Negotiation and Leadership**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

**Learning Objectives**

The Learning Objectives of this course are as follows:

- To introduce the students to the importance of negotiation skills
- To expose the students to diverse contexts and situations that require negotiation skills
- To learn about the management of critical and crisis situations
- To evolve relationship building skills

**Learning outcomes**

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to apply negotiation skills to obtain desired results
- After studying this course, students will be able to understand the various aspects of a crisis situation for appropriate management.
- After studying this course, students will be able to learn how to manage complex negotiation situations.
- After studying this course, students will be able to understand the process of relationship building.
- After studying this course, students will be able to test and judge the legitimacy of the terms of negotiation

## SYLLABUS OF SEC-27

### Unit 1 (4 weeks)

**Negotiation Fundamentals** Key concepts and core vocabulary of negotiation process, deal-making and dispute resolution, Assumptions and biases that are barriers to effective negotiation, Collaborative approaches, risk & opportunities to achieve win-win outcomes

**Negotiation Canvas** Introduction of a framework for negotiation preparation and how to use it, Elements of negotiation canvas i.e relationship, alternatives, legitimacy, options, interests among others, Difference between position and interests

### Unit 2 (4 weeks)

#### Managing critical moments

Types of negotiation approaches used by negotiators Critical moments that can make or break the deal How to identify these critical moments, Strategies to manage critical moments in the negotiation

#### Effective Communication and Relationship Building

Role of communication and relationship in negotiation, Understanding the other party's psychology to understand their interests, build trust and improve the scope of the negotiation, Unconditionally constructive behaviours, Methods of building trust, and empathy, Overcoming communication barriers, difficult behaviours and information asymmetry

### Unit 3 (4 weeks)

Discovering, creating and claiming value

Methods of value discovery during negotiation, How is value divided and claimed between the negotiating parties?, What are the tradeoffs, mutual gains and contingencies?, Concept of distributive bargaining, equitable solutions, and ZOPA (zone of possible agreement), Biases and enemies of value creation

#### Complex Negotiations

Strategies for negotiations are not straightforward, involve several issues, include multiple stakeholders, and /or involve powerful parties, Hofstede's Culture dimensions, Dealing with people with difficult behaviours

### Unit 4 (4 weeks)

#### Managing Alternatives

Concept of BATNA (Best Alternative to Negotiated Agreement), Methods to evaluate alternative options/offers, Management of one's alternatives and other party's alternatives during negotiation.

#### Legitimacy and Building Commitment

When to say yes to agreed terms, and when to walk away, Criteria for decision-making on negotiated terms, Assessment of the legitimacy of negotiated terms, Leading all parties to commit to the negotiated agreement, Steps from plan to execution

**Essential/Recommended Readings**

- Getting to Yes: Negotiating Agreement Without Giving in by Roger Fisher, William L. Ury, and Bruce Patton. Penguin Books
- Difficult Conversations: How to Discuss What Matters Most by Douglas Stone, Bruce Patton, Sheila Heen. Penguin Books
- Value Negotiation: How to Finally Get the Win-Win Right by Horacio Falcão. Pearson Education

Articles

- The Seven Myths of Win-Win Negotiations, by Horacio Falcão
- Control the Negotiation before it begins by Deepak Malhotra

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**SEC –28: Entrepreneurship Development**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

**Learning Objectives**

The Learning Objectives of this course are as follows:

- To introduce the students to the entrepreneurship as a mindset.
- To develop entrepreneurial skills in the students by giving an overview of the capabilities that are needed to become an entrepreneur.
- To develop a keen insight in the students for identifying viable disruptive business opportunities and effectively manage ventures.
- To learn about the distributed organizations and distributed ledger.

**Learning outcomes**

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to identify the entrepreneurial potential within and appreciate the role of entrepreneurship in the holistic development of the society.
- After studying this course, students will be able to understand the process of setting up entrepreneurial ventures.
- After studying this course, students will be able to develop and appraise disruptive business ideas that can be turned into sustainable business ventures.
- After studying this course, students will be able to identify the financial, marketing, legal, human resource, operations, and general management skills that are important for the successful launch and operation of a new venture.



## SYLLABUS OF SEC-28

### Unit 1 (4 weeks)

#### ENTREPRENEURSHIP

Concept, knowledge and skills requirement; characteristics of successful entrepreneurs; role of entrepreneurship in economic development; entrepreneurship process; factors impacting emergence of entrepreneurship

### Unit 2 (4 weeks)

#### STARTING THE VENTURE

Generating business idea – sources of new ideas, methods of generating ideas, opportunity recognition; environmental scanning, competitor and industry analysis; feasibility study – market feasibility, technical/operational feasibility, financial feasibility: drawing business plan

### Unit 3 (4 weeks)

#### FUNCTIONAL PLANS

Marketing plan – marketing research for the new venture, steps in preparing marketing plan, contingency planning; organizational plan – form of ownership, designing organization structure; financial plan – cash budget, working capital

### Unit 4 (4 weeks)

#### SOURCES OF FINANCE

Debt or equity financing, commercial banks, venture capital; financial institutions supporting entrepreneurs; legal issues – intellectual property rights patents, trademarks, copyrights, trade secrets, licensing.

#### Essential/Recommended Readings

- Entrepreneurship, Hisrich, Robert D., Michael Peters and Dean Shepherd, Tata McGraw Hill, New Delhi
- Entrepreneurship, Barringer, Brace R., and R. Duane Ireland, Pearson Prentice Hall, New Jersey (USA)
- Entrepreneurship, Lall, Madhurima, and Shikha Sahai, Excel Books, New Delhi
- Entrepreneurship Development and Small Business - Charantimath, Poornima, Pearson Education, New Delhi
- Entrepreneurship, Kuratko, Donand and Richard Hodgetts, Cengage Learning India Pvt. Ltd., New Delhi

#### Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**SEC –29: Finance for Everyone**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2	1		1		

**Learning Objectives**

The Learning Objectives of this course are as follows:

- To offer an integrated approach to the understanding of concepts and applications of financial planning.
- To help the students in their financial planning.

**Learning outcomes**

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of financial literacy and the institutions providing financial services.
- After studying this course, students will be able to prepare a financial plan, budget and manage personal finances.
- After studying this course, students will be able to open, avail and manage services offered by banks.
- After studying this course, students will be able to open, avail and manage services offered by post offices.
- After studying this course, students will be able to plan for life insurance and property insurance.
- After studying this course, students will be able to choose instruments for investment in shares.

## SYLLABUS OF SEC-29

### **Unit 1: Introduction, Financial Planning and Budgeting (4 weeks)**

Meaning, importance and scope of financial literacy; Prerequisites of financial literacy – level of education, numerical and communication ability; Various financial institutions – banks, insurance companies, post offices, mobile app based services. Need of availing of financial services from banks, insurance companies and postal services. Concept of economic wants and means for satisfying these needs; Balancing between economic wants and resources; Meaning, importance and need for financial planning; Personal budget, family budget, business budget and national budget; Procedure for financial planning and preparing a budget; Budget surplus and budget deficit, Avenues for savings from surplus, Sources for meeting the deficit.

### **Unit 2: Banking Services (3 weeks)**

Types of banks; Banking products and services – Various services offered by banks; Types of bank deposit accounts – savings bank account, term deposit, current account, recurring deposit; pan card, address proof, KYC norm; Various types of loans – education loan, consumer durable loan, vehicle loan, housing loan, short term, medium term, long term, microfinance, bank overdraft, cash credit, mortgage, reverse mortgage, hypothecation, pledge, Agricultural and related interest rates offered by various nationalized banks; Cashless banking, e-banking, check counterfeit currency; CIBIL, ATM, net banking, RTGS, NEFT, IMPS, electronic clearance services (ECS), debit and credit card, app based payment system, bank draft and pay order; banking complaints and ombudsman.

### **Unit 3: Financial Services from India Post Office (3 weeks)**

Post office savings schemes: savings bank, recurring deposit, term deposit, monthly income scheme, kisan vikas patra, NSC, PPF, senior citizen savings scheme, sukanya samridhi yojana; india post payments bank. money transfer: money order, e-money order. instant money order, collaboration with the western union financial services; mo videsh, international money transfer service, money gram international money transfer, indian postal order.

### **Unit 4: Insurance Services (3 weeks)**

Life insurance policies: life insurance, term life insurance, endowment policies, pension policies, ULIP, health insurance plans, comparison of policies offered by various life insurance companies, comparison of policies offered by various health insurance companies. Property insurance policies. Post office life insurance schemes: postal life insurance and rural postal life insurance.

### **Unit 5: Stock Markets – Some Basic Concepts (3 weeks)**

Terms used in stock markets: SENSEX, NIFTY, primary markets, secondary markets, initial public offering(IPO), follow-on public offering (FPO), offer for sale (OFS), block deal, equity shares, preference shares, debentures, bonus shares, stock split, dividend, buyback, DEMAT

account, trading account, delivery instruction slip (DI Slips), blue chips, defensive stocks, face value, market value, market capitalisation, pre-opening session, trading session, opening price, closing price, business days, bull, bear, bull market, bear market, risk, stop loss, derivatives, call option, put option, hedge, holding period; Tax on short term capital gains and long-term capital gains, Mutual Fund and its various schemes.

**Practical Exercises:**

The learners are required to:

- visit banks, post offices, and insurance companies to collect information and required documents related to the services offered by these institutions and to know the procedure for availing of these services.
- carry out the comparative analysis of different types of life insurance policies.
- carry out the comparative analysis of different types of health insurance policies.
- prepare a personal and family budget for one/six/ twelve months on imaginary figures.

**Suggested Readings:**

- Avadhani, V. A. "Investment Management" Himalaya Publishing House Pvt. Ltd., Mumbai.
- Batra, J.K., Accounting and Finance for Non-finance Managers, Sage Textbook
- Chandra, P. "Investment Game: How to Win" Tata McGraw Hill Education, New Delhi.
- Kothari, R. "Financial Services in India-Concept and Application" Sage Publications India Pvt. Ltd., New Delhi.
- Milling, B. E. "The Basics of Finance: Financial Tools for Non-Financial Managers" Universe Company, Indiana,
- Mitra, S., Rai, S. K., Sahu, A. P., & Starn, H. J. "Financial Planning" Sage Publications India Pvt. Ltd., New Delhi.
- Zokaityte, A. "Financial Literacy Education" Palgrave Macmillan, London.

**Note: Learners are advised to use the latest edition of readings.**

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC –30: Personal Financial Planning

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>	<b>1</b>		<b>1</b>		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with different aspects of personal financial planning like savings, investment, taxation, insurance, and retirement planning
- To develop the necessary knowledge and skills for effective financial planning.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the meaning and appreciate the relevance of financial planning.
- After studying this course, students will be able to understand the concept of investment planning and its methods.
- After studying this course, students will be able to examine the scope and ways of personal tax planning.
- After studying this course, students will be able to analyse insurance planning and its relevance.
- After studying this course, students will be able to develop insight into retirement planning and its relevance.

## SYLLABUS OF SEC-30

### **Unit 1: Introduction to Financial Planning: (3 weeks)**

Financial goals, steps in financial planning, budgeting incomes and payments, time value of money. Introduction to savings, benefits of savings, management of spending & financial discipline, Setting alerts and maintaining sufficient funds for fixed commitments.

### **Unit 2: Investment Planning: (4 weeks)**

Process and objectives of investment, concept and measurement of return & risk for various asset classes, measurement of portfolio risk and return, diversification & portfolio formation. Gold bond; Real estate; Investment in greenfield and brownfield Projects; Investment in fixed income instruments, financial derivatives & commodity market in India. Mutual fund schemes; International investment avenues. Currency derivatives and digital currency.

### **Unit 3: Personal Tax Planning: (3 weeks)**

Tax structure in India for personal taxation, Scope of personal tax planning, exemptions and deductions available to individuals under different heads of income and gross total income. Comparison of benefits - Special provision u/s 115 BAC vis-à-vis General provisions of the Income-tax Act, 1961, tax avoidance versus tax evasion.

### **Unit 4: Insurance Planning: (3 weeks)**

Need for insurance. Life insurance, health insurance, property insurance, credit life insurance and professional liability insurance.

### **Unit 5: Retirement Benefits Planning: (3 weeks)**

Retirement planning goals, process of retirement planning, Pension plans available in India, Reverse mortgage, Estate planning.

### **Practical Exercises:**

The learners are required to:

- perform electronic fund transfers through net banking and UPI.
- identify certain recent Ponzi schemes in the market.
- prepare tax planning for a hypothetical individual.

### **Suggested Readings:**

- Halan, M. "Let's Talk Money: You've Worked Hard for It, Now Make It Work for You" Harper Collins Publishers, New York.
- Indian Institute of Banking & Finance. "Introduction to Financial Planning" Taxmann Publication, New Delhi.
- Keown A.J. "Personal Finance" Pearson, New York.
- Madura, J. "Personal Finance", Pearson
- Pandit, A. "The Only Financial Planning Book that You Will Ever Need" Network 18 Publications Ltd., Mumbai.
- Sinha, M. "Financial Planning: A Ready Reckoner" McGraw Hill Education, New York.
- Tripathi, V. "Fundamentals of Investment" Taxmann Publication, New Delhi.

**Note: Learners are advised to use the latest edition of readings.**

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty

## SEC –31: Harmonium

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>			<b>2</b>		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To initiate the students to a very popular instrument of Indian music through a general discussion on the role of Harmonium in accompanying various singing forms
- To throw light on the various types of musical instruments that are played in Hindustani music
- To discuss the features of various types of wind instruments
- To teach the student the fundamentals of playing the Harmonium, such as the correct placement of the fingers on the instrument, the right posture for sitting etc.
- To demonstrate tonal exercises, such as palta-s and alankar-s, vital for playing.
- To initiate his training in the realm of playing the instrument with the basic ragas, like Alhaiya, Bilawal and Yaman

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to learn the origin, development and classification of musical instruments.
- After studying this course, students will be able to learn the importance of wind instruments.
- After studying this course, students will be able to learn gat and dhun in prescribed ragas.
- After studying this course, students will be able to demonstrate the various talas and their layakarries.
- After studying this course, students will become well-versed with the techniques of



- playing Harmonium
- After studying this course, students will be able to achieve dexterity of the hand, through regular practice of the playing exercises at home.
- After studying this course, students will be able to read and learn new compositions in the prescribed ragas.
- After studying this course, students will be able to grasp the various grammatical aspects of the prescribed ragas, like how they arise, what are the respective rules that govern these ragas, how do the notes move in the ragas, what are the performing times of the ragas etc.
- After studying this course, students will be able to learn the art of playing a raga, especially with regard to having the Tabla as an accompanying instrument.

## SYLLABUS OF SEC-31

### Unit I

Origin and Development of Musical Instruments

### Unit II

Classification of instruments

### Unit III

Study of Wind Instruments

### Unit IV

Writing notation of compositions in prescribed ragas

### Unit V

Writing notation of Talas with Thah, Dugun, Tigun and Chaugun in Kaharva

### Unit VI

Theoretical knowledge of the prescribed ragas

### Recommended Books:

- Sangeet Bodh – Sharadchandra Shridhar. Paranjape:-Madhye Pradesh Hindi Granth Acadamy , Bhopal, IstEdition: 1972
- Samvadini – Jayant Bhalodkar :- Kanishka Publication, New Delhi, Ist Edition: 2006
- Dhvani Aur Sangeet - Lalit Kishore Singh:- Bhartiye Gyanpeeth, Lodi Road, New Delhi, Ist Edition: 1954
- Kramik Pustak Malika – Part- II :- V.N. Bhatkhande, Sangeet Karyalaya, Hathras, Editor: Laxminarayan Garg, January: 2008
- Sangeet ShastraVigyan - Dr.Pannalal Madan:- Rajasthan Hindi Granth Acadamy, Jaipur, 2nd Edition: 1991, Abhishek Publication
- Tal Parichay Part III ,Girishchandra Srivastava, Rubi Prakashan , Allahabad, 2nd

Edition: June: 2002

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(Practical - 1): Stage Performance & Viva-Voce:

**Prescribed Ragas:**

- Alhaiya Bilawal
- Yaman
- Khamaj

**Unit I**

Ability to play five alankars in the prescribed ragas.

**Unit II**

One Sargam Geet to be played each in the prescribed ragas

**Unit III**

One Lakshan Geet each to be played in the prescribed ragas

**Unit IV**

Two Drut Khyals with elaborations in any of the prescribed ragas

**Unit V**

Ability to play a Dhun in raga Khamaj

**Unit VI**

In-depth knowledge of the prescribed ragas

**Unit VII**

Knowledge and demonstration of the following tala with dugun, tigon and chaugun - Kaharva

**Unit VIII**

Basic knowledge of Harmonium and its various parts

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC –32: Environmental Audit

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	<b>2</b>			<b>2</b>		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To safeguard the environment and minimize risks to human health.
- To timely audit environmental managements systems and equipment's. compliance of various relevant international, national, local and other laws and regulations.
- To safeguard humans from exposure to various environmental risks causing health and safety issues.
- To determine, whether specified environmental activities, events, conditions, management systems, or information about these matters conform with audit criteria, and communicating the results of this process.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to identify solutions for efficient use of resources and greater adoption of clean and environmentally sound technologies for sustainable industrial development.
- After studying this course, students will be able to develop environmentally sound and equitable development strategies for reducing the carbon footprints which are responsible for climate change and human health hazards.

## SYLLABUS OF SEC-32

### **Unit 1: Need of Environment Auditing (EA)**

**(5 weeks)**

Environmental degradation (physical, chemical and biological) due to various pollutants of air, water and soil (Metal, Waste, Radiation etc). Environmental Health Hazards from various pollutants like SPM in air, microbes in soil/water and occupational health hazards due to many toxic exposures in the past.

**Unit 2: Global Environment Governance**

**(5 weeks)**

Timely auditing of environmental managements systems and equipment's. Compliance of various relevant international, national, local and other laws and regulations. International concerns and efforts for environmental protection; role of United Nations; Stockholm summit; priority issues; Rio Summit: Sustainable development; Earth Day; Environment Day; Ecotourism.

**Unit III: Environmental Audit and its scope**

**(5 weeks)**

Types of auditing, Features of Effective Auditing, Programme planning and organization of Auditing Programme, Pre-visit data collection, Auditing Protocol, Onsite Audit; Data Sampling; Inspection, Evaluation and Presentation, Audit Report; Action plan, Management of Audit, Benefits of Environmental Audit, Environmental Audit Program in India.

**Practical Exercises:**

- Physico-chemical properties of polluted soils and water collected from various sites
- Identification and sampling of all organisms in polluted soil samples (Nematodes, Annelida, Arthropoda, Mollusca etc).
- Identification of microbes from contaminated soil samples.
- Molecular characterization of environmental DNA (eDNA) from soil microbes.
- Identification of common health hazards by photographs (Minamata disease Japan 1956, Itai-itai disease- Toyama, Japan 1950, Acute lung disease Bhopal, India 1985, Radiation illness- Chernobyl, USSR 1986, Cholera epidemic- Peru 1991).
- Surveillance and quality of analysis of potable water (MPN method).
- Comparative analysis of various mega building projects and green belts, River valleys mining projects and its impact assessment
- Case studies on effective utilization of environmental laws of anyone: oil refineries, electrical/electronic, fertilizer, petrochemical, pesticide or pharmaceutical industry.  
a) Questionnaires; b) Data Collection and Generation; c) Integration of Data and Analysis

**Recommended Readings:**

- Vasudevan, N. (2006). Essentials of Environmental Science. Narosa Publishing house, Delhi.
- Liu, J, Zhang, L, Liu, Z (2017). Environmental Pollution Control
- Srivastava, A.K. (2003). Environmental Auditing, A.P.H. Publishing Corporation, ISBN 81- 7648-443-1.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC –33: SUSTAINABLE ECOTOURISM AND ENTREPRENEURSHIP

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To train students in concepts and principles of sustainable ecotourism leading to a new generation of entrepreneurs
- To inculcate field-based practical skills in translating ecological systems into wealth generation while conserving natural resources
- To transform local biological wealth into a hub of global attraction and generate a scientific basis of Indian traditional knowledge

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to develop next-generation ecological entrepreneurs
- After studying this course, students will be able to evolve eco-literate society by integrating market-based instruments with eco-cultural knowledge of traditional societies
- After studying this course, students will be able to practice ecological knowledge for wealth generation, environmental conservation, and popularization of Indian traditional knowledge

## SYLLABUS OF SEC-33

### Practical/Hands-on Exercises

**(02 Credits: 60 hours)**

- Assess the current state of ecotourism in little-known/explored areas and examine ecotourism potential
- Field surveys to identify the existing locations having ecological, wildlife, scenic, and ethnic potential for ecotourism and analyze existing prevalent eco-practices having the potential to integrate with ecotourism programme
- Identify ten plant species having ecological, economic, and cultural significance as ecotourist

attraction

- Develop stories on the selected wild habitats to attract ecotourists from within and outside the country
- Identify suitable track and prepare a checklist of birds and animals with their stories for a diverse group of ecotourists
- Examine the current state of natural resources and develop suitable messages and appropriate media for educating different target groups
- Survey and identify the target group for ecotourism based on their age, education, economic and other criteria and evaluate their psychological barriers to ecotourism
- Conduct inventory of facility and analyze a preliminary competitive advantage over ecological attractions in the nearby area
- Analyze tourist spending patterns and track preferences for ecotourism attractions in nearby areas and add value to ecological, wildlife, and cultural attractions
- Survey attitude and perception of residents regarding ecotourism plan and analyze costs and benefits of the sustainable ecotourism development programme using a demand-driven marketing approach
- Develop messages, stories, and pictures to attract tourists and promote ecotourism in the target area
- Analyze basic elements of ecotourism, the special needs of ecotourists, develop trips and travel packages offering an array of experiences and predict the market trends
- Develop ecotourist activities for individuals, families, and groups and craft social media campaigns for the proposed ecotourism business
- Develop a plan for strategic alliances and partnerships with other projects/groups /organizations for public- private partnership in the proposed ecotourism programme

**Teaching and learning interface for practical skills:**

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including

- (a) laboratory practicals;
- (b) field-work exercises;
- (c) customized exercises based on available data;
- (d) survey analyses;
- (e) developing case studies;
- (f) demonstration and critical analyses;
- (h) experiential learning individually and collectively.

Prospective sector(s):

- Forest Departments
- Tourism industry
- World Bank
- UNDP
- WWF
- Environmental NGOs

**Suggested Reading:**

- Ballantyne, R. and Packer, J., 2013. International Handbook on Ecotourism. Edward Elgar Publishing Limited, UK
- Blumstein, D.T., Geffroy, B., Samia, D.S. and Bessa, E., 2017. Ecotourism's promise and Peril. A Biological Evaluation. Springer Int. Publ. (Chapters 10–11)
- Fennell, D.A., 2014. Ecotourism. An Introduction. Routledge, London, UK.
- Fletcher, R., 2014. Romancing the wild. In Romancing the Wild. Duke University Press.
- Tanguay, G.A., and Rajaonson, J., (2015). Evaluating Sustainable Tourism Using Indicators:
- Problems and Solutions. In: Brophy, S.C., (Ed), Ecotourism: Practices, Benefits and Environmental Impacts. Nova Science Publishers, pp. 119 – 134.
- Wearing, S. and Schweinsberg, S., 2019. Ecotourism: Transitioning to the 22nd century. Routledge

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC –34: DEVELOPING SUSTAINABILITY PLANS FOR A BUSINESS

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To assess the status of integration of social and ecological values into business practices
- To determine strengths and weaknesses in linkages between people, planet, and profit during business practices
- To correlate the changes in ecological footprint with growth in corporate responsibility
- To recommend strategies to improve current CSR practices for environmental conservation and enhance the return on investment of the organization

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to develop CSR plans to balance ecological security with economic success.
- After studying this course, students will be able to evolve methods for the financial stability of different organizations/companies
- After studying this course, students will be able to develop a framework to reduce energy consumption, adopt renewable resources and integrate waste management strategies among employees
- After studying this course, students will be able to design sustainable business plans having major positive impacts on plant and next-generation business setting

## SYLLABUS OF SEC-34

### Practical/Hands-on Exercises

**(02 Credits: 60 hours)**

- Determine strategies to reduce carbon footprint and improve supply chain efficiency of an organization
- Assess the current status of renewable energy use and investment and develop



- strategies to become carbon negative in the next decade
- Identify opportunities for sustainable alternatives for an environmental cause that aligns well with the organizational goal and areas of philanthropic investments
  - Analyze material use at different stages of organizational process based on a set of sustainable principles and suggest environment-friendly alternatives to reduce waste
  - Calculate the water footprint of the organization and develop methods for mindful water consumption to improve human health and reduce the economic cost
  - Examine the current status of infrastructure with respect to the energy-efficient lighting system and evolve strategies for shifting to 100% renewable energy
  - Determine the ecological impact of current infrastructure using guiding principles of LEED (Leadership in Energy and Environmental Design) Certification and identify areas for biophilic design, green spaces, and work conditions
  - Optimize to reduce waste by improved methods of handling and disposing of waste
  - Develop guidelines for eco-friendly transportation to reduce fuel usage and maximize route efficiency
  - Eco-innovation in developing energy alternatives and providing solutions to complex environmental challenges
  - Document the biological wealth (especially plants, insects, and birds) of an organization and develop the green design to maintain and enrich the biological wealth

### **Teaching and learning interface for practical skills:**

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective sector(s):

(a) Environmental Consultancies, (b) Sustainability Advisors, (c) All Multi-National Large-Scale Industries, and (d) Environmental NGOs

### **Suggested readings**

- Calkins, M., 2012. *The Sustainable Sites Handbook: A Complete Guide to the Principles, Strategies, and Best Practices for Sustainable Landscapes* (Vol. 39). John Wiley & Sons.
- Daniels, T., 2017. *The Environmental Planning Handbook: For Sustainable Communities and Regions*. Routledge.
- Davoudi, S., Cowell, R., White, I. and Blanco, H. eds., 2019. *The Routledge Companion to Environmental Planning*. Routledge.
- Quaddus, M.A. and Siddique, M.A.B. eds., 2013. *Handbook of Sustainable Development Planning: Studies in Modelling and Decision Support*. Edward Elgar Publishing.
- USEPA, 2012. *Planning for Sustainability: A Handbook for Water and Wastewater Utilities*.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC –35: PROSPECTING E-WASTE FOR SUSTAINABILITY

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To provide in-depth knowledge on the effective mechanisms to regulate the generation, collection, and storage of e-waste
- To gain insights into the internationally/nationally acceptable methods of transport, import, and export of e-waste within and between countries
- To develop a holistic view on recycling, treatment, and disposal of e-waste and related legislative rules.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to holistically analyze the environmental impacts of e-waste
- After studying this course, students will be able to apply the skills and various concepts for sustainable management of e-waste
- After studying this course, students will be able to decipher the role of various national and international regulations for e-waste management
- After studying this course, students will be able to provide specific recommendations for improved methods for handling e-waste at different stages such as generation, collection, storage, transport, and recycling

### SYLLABUS OF SEC-35

#### **Practical/Hands-on Exercises**

**(02 Credits: 60 hours)**

- Identification of e-waste and its types
- Composition of e-waste and segregation- from the material provided
- Dismantling of e-waste and handling process
- Visit a nearby e-waste handling facility

- Environmental protection laws and producer's responsibility for e-waste management
- Build an understanding of how regulatory mechanisms can be utilized in the management of e-waste in educational institutions.
- Discussion on plausible ways and implementation of e-waste reduction at the source
- Evaluation of the status of e-waste handling at your institution. Suggest potential solutions as per the existing norms of E-Waste (Management) Rules, 2016 and beyond.
- Estimate how recycling of e-waste in metro cities will go in sync with the circular economy
- Develop an understanding and itinerary of the process for procuring e-waste import permissions.
- Inventory of the e-waste disposal mechanisms.
- Study the evolution of e-waste management rules and its implementation- Hazardous Waste Rules, 2008, E-waste (Management and Handling) Rules, 2011; and E-Waste (Management) Rules, 2016
- Study the international laws on e-waste management- the international legislations: The Basel Convention; The Bamako Convention; The Rotterdam Convention; Waste Electrical and Electronic Equipment (WEEE) Directive in the European Union; Restrictions of Hazardous Substances (RoHS) Directive

### **Teaching and learning interface for practical skills:**

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective sector(s):

- Electric and electronic industries,
- E-waste Recycling Unites,
- Private entrepreneurs,
- Environmental consultancies,
- Pollution Boards, and
- Environmental NGOs

### **Suggested Readings:**

- Hester, R.E. and Harrison, R.M., 2009. Electronic Waste Management: Design. Analysis and Application. Royal Society of Chemistry Publishing. Cambridge, UK.
- Fowler, B.A., 2017. Electronic Waste: Toxicology and Public Health Issues. Academic Press.
- Gaidajis, G., Angelakoglou, K. and Aktsoglou, D., 2010. E-waste: environmental problems and current management. Journal of Engineering Science and Technology Review, 3(1), pp.193-199.
- Janyasuthiwong, S., 2020. Metal Removal and Recovery from Mining Wastewater and E-waste Leachate. CRC Press.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 36: E-Tourism

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		.

## Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about the application of e-business in tourism sector with understanding of contemporary issues of the use of electronic technology in the tourism business.
- To learn about e-business strategies and how to apply it to help them comprehend a variety of basic e-business ideas and theories.
- To teach fundamental concept of what e-business is and how to conduct e-business successfully in the tourism sector.

## Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to gain insight into concept of e-tourism, travel intermediaries and travel websites.
- After studying this course, students will be able to learn and explain the emerging ICT tools and its impact in the industry.
- After studying this course, students will be able to understand and implement the use of social media platforms/artificial intelligence in e-tourism.

## SYLLABUS OF SEC-36

## Unit-I

(5 Weeks)

Introduction to E-tourism, stages of ICT revolution, ICTS and new business tools, Strategic and Operational use of IT in Tourism, The Internet and tourism – a powerful combination. Networks for intermediaries: Travel trade intermediaries-Features of a travel trade web site, implementing a travel trade website, online travel intermediaries.

**Unit– II**

**(5 Weeks)**

E-business for Destination Management Organizations: Principles and concepts – Positioning DMOs in value net, destination e-business system model, e-Business Partnerships for DMOs, Case Studies of Red Apple DMC, OYO Rooms, OLX, Zoom Car, Ofo Cycles etc.

**Unit– III**

**(5 Weeks)**

Social Media Marketing in Tourism - Facebook, Twitter, YouTube, WhatsApp - Travel Blogs –Usage of Artificial Intelligence- Virtual Reality - Challenges for conventional business models and Competitive strategies.

**Essential/Recommended Readings**

- Reynolds, Jonathan. (2012). E-Business: A management Perspective. Oxford University Press.
- Kulkarni. P, Jahirabadkar. S & Chande. P. (2012). E-Business. Oxford University Press.
- World Tourism Organization. (2001). E-business for tourism: Practical guidelines for tourism, Destinations and businesses. World Tourism Organization.
- D. Buhalis: e-Tourism, Information Technology for Strategic Management
- Buhalis & Costa: Tourism Business Frontiers
- Poon: Tourism, Technology and Competitive Strategies Harish Bhatt & Badan: Impact of ICT in Tourism

**Suggested Reading:**

- Stiakakis. E. & Georgiadis C. K. (2009). Drivers of a tourism e-business strategy: the impact of information and communication technologies. Oper Res Int J. DOI 10.1007/s12351-009-0046-6.
- European Commission (2004). Electronic Business in Tourism: Key issues, case studies, conclusions. European Commission. Enterprise publications. Sector Report: No. 07-II, August 2004.
- Šimunić. M, Pilepić L., Šimunić M. (2013). Tourism and e-business: the semantic paradigm as a precondition for success. Informatol. 46, 2013., 1, 1-7.
- Buhalis. D., & Hyun Jun S. (2011). E-Tourism. Contemporary Tourism Reviews: Series. Goodfellow Publishers Limited, Woodeaton, Oxford, OX3 9TJ.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**SEC –37: Digital Film Production**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

**Learning Objectives**

The Learning Objectives of this course are as follows:

- To introduce the students to the art of digital video making and editing
- To learn about the tools required for video making and editing
- To learn about the various aspects in pre and post production of videos.

**Learning outcomes**

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of various aspects of audio-video production
- After studying this course, students will be able to prepare an effective layout for making an effective video.
- After studying this course, students will be able to apply the tools required for video production and editing.

**SYLLABUS OF SEC-37**

**Unit 1: Introduction, Financial Planning and Budgeting (4 weeks)**

**Audio Production:** Concept of Sound, Types of sound, Audio range, Know your equipment's (Acoustic, Microphone, Recorder, Audio Mixer, Cables & connectors), Process of recording, Mixing, Sound processing, Recording level, Audio Editing, Dubbing & voiceover (Process, steps)



**Unit 2: (4 weeks)**

**Video Production (Pre-Production):** Concept, What is pre-production, Concept/visualization, R & D, Screen play writing, Storyboard making, Shooting script writing, Peoples involved in pre-production, Set making, Copyright , Music making, Budgeting, Production Design, Location hunting, Hiring of equipment & crew members

**Unit 3: (4 weeks)**

**Video Production (Production):** Know your equipment, Camera & accessories, Lights & Camera support, Clapboard, Sound equipment, Field Monitor, Blocking, Rehearsal, Lighting, Shooting

**Unit 4: (4 weeks)**

**Video Production (Post Production):** Compiling the concept and Shooting material to final stage, Peoples involved in Post-production, Know your equipment, Editing, Color grading, Publicity, Transmission, Distribution and Rating

**Practical Exercises and Projects**

- Recording & Mixing of multi-track audio
- Budget Making & Script writing 05 minutes program
- Shooting for 05 minutes program (News / Music Video / Documentary / Feature / Chat show / Discussion etc.)
- Editing of 05 minutes video program

**Audio Production (Project)**

- Knowing the audio equipment's & software
- Recording process
- Mixing & Editing of various sound
- Exporting sound in various audio formats & project

**Video Production (Project)**

- Story writing, Storyboard making, Shooting script writing
- Location hunting, Breakdown making, Budget making
- Set making, Lighting, Shooting
- Editing, BGM posting, Color grading, Publicity, Exhibition & Transmission

**Suggested Readings:**

- Digital Filmmaking for Beginners A Practical Guide to Video Production (ELECTRONICS) by Michael K. Hughes, McGraw Hill TAB.
- Digital Filmmaking for Beginners A Practical Guide to Video Production, McGraw Hill TAB
- The Digital Filmmaking Handbook, Mark Brindle
- Video Production, Vasuvi Belavdi, Oxford Higher Education

- Editing Digital Video: The Complete Creative and Technical guide, Robert Goodman and Patrick McGrath, McGraw Hill Education TAB
- Digital Video Camerawork, Peter Ward, Routledge.
- Digital Video Hacks: Tips & Tools for Shooting, Editing, and Sharing, Joshua Paul, O'Reilly Media.

**Note: Learners are advised to use the latest edition of readings.**

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC –38: Graphics Design & Animation

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

### Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the skill of animation.
- To learn about the application of 2D and 3D animation.

### Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of animation and graphics design
- After studying this course, students will be able to learn graphics design in 2D and 3D animation.
- After studying this course, students will be able to learn the application of graphics design in 2D and 3D animation in advertising and other areas.

## SYLLABUS OF SEC-38

### Unit 1:2D Animation

(8 weeks)

**Introduction to 2D Animation:** Introduction to 2D Animation, Drawing concept, Colour theory & basics, Incorporating sound into 2D animation

**Layout & Designing:** Basic of sketching, still life and assignment of basic drawing, Composition of basic elements, Work in different media, such as drawing, collage, and painting, Explore the relationship between elements and principal, Pixel and resolution: Vector and Bitmap Graphics

### **Graphics and advertising (Practical)**

- Creating Digital Layout
- Professional image editing (PHOTOSHOP)
- Advertising and relevant case , Graphics and illustration (Corel Draw, Paint)
- Vector Composition , 2D animation (Macromedia Flash)

### **Broadcast Design (Practical)**

- Working with visual images
- Story Boarding
- Titles and Credit Making
- Stop motion animation

### **Production / Post-Production (Practical)**

- Paint & animate (scanning, tracing, ink & Paint)
- Understanding Background composition
- Basic Understanding of 2D animation and technique
- Animation with flash, Portfolio Making

## **Unit 2: 3D Animation**

**(8 weeks)**

**3D Modeling:** Introduction to 3D space in Blender, Introduction to Modeling Techniques, In-organic Modeling, Organic Modeling

**3D Shading:** Use of Materials & Shader, Shader and Texture Editing, Shading Organic Model, Shading In-Organic Models

### **3D Animation and Rigging (Practical)**

- Introduction to 3D Animation
- Create, Edit and working with Animation Graph, Rigging using Blender
- Setting up controllers for joints
- Simple Skeleton structure with proper joint orientation

### **3D Lighting and Rendering (Practical)**

- Understanding Lighting in Cycles
- Direct and Indirect Lighting
- Light Linking, Final Composition
- Creating composition and Light with the Shaded Models

### **3D Dynamics (Practical)**

- Introduction to Dynamics, Active and Passive Bodies
- Creating basic Simulation and collision using Rigid body
- Cloth Simulation, Simulation of Brick wall collision
- Introduction to Fluid Effects, Creating fluid simulation

## **Project**

### **(Digital Imaging)**

- Design Print advertisement for Service
- Design Print advertisement for Product
- Design Print advertisement an Event
- Design Print advertisement on Social Awareness
- Design a collage with a social message

### **2D Animation**

- Drawing fundamentals using lines
- Sketching of cartoon characters
- 2D Logo designing
- Storyboarding of a 30 seconds film
- Portfolio making of an organization

### **3D Animation**

- Exploring the Interface of 3D application & Basic Modeling
- Create different types of Materials and create a Shading
- Create a simple walk cycle using the character rigs
- Create a composition and Light set up
- Create a Fluid simulation & rendering

### **Suggested Readings:**

- The Illusion of Life: Disney Animation, Ollie Johnston and Frank Thomas, Disney Editions.
- Blender Production Creating Short Animations from Start to Finish, Roland Hess, Routledge.
- Animating with Blender: Creating Short Animations from Start to Finish, Roland Hess, Focal Press
- Simplified Drawing for Planning Animation, Wayne Gilbert, Anamie Entertainment Ltd.
- Getting Started in 3D with Maya, Adam Watkins, Routledge.
- Creating Characters with Personality: For Film, TV, Animation, Video Games, and Graphic Novels, Tom Bancroft, Watson-Guptill
- Force: Dynamic Life Drawing for Animators, Mike Mattesi, Focal Press

**Note: Learners are advised to use the latest edition of readings.**

### **Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**Semester-1**  
**SEC-1: Introduction to Arabic Calligraphy**  
**Credits: 02**

<p><b>Course Objectives:</b></p> <ol style="list-style-type: none"> <li>1. To make the learners familiar with Arabic Calligraphy.</li> <li>2. To make them aware of different Arabic scripts.</li> </ol>	<p><b>Course Learning Outcomes:</b></p> <p>The student will be able to:</p> <ol style="list-style-type: none"> <li>1. Know about the history of Arabic Calligraphy.</li> <li>2. Read and write Arabic letters and text.</li> <li>3. Recognize different Arabic scripts/fonts.</li> <li>4. Write in two Arabic scripts: Naskh and Ruq'ah.</li> </ol>
<p><b>Unit 1</b></p> <ul style="list-style-type: none"> <li>- Calligraphy</li> <li>- Arabic Calligraphy</li> <li>- Origin and Development of Arabic Calligraphy</li> <li>- Lesson on Arabic Alphabet</li> <li>- Introduction to Arabic script Ruq'ah</li> <li>- Introduction to Arabic script Naskh</li> </ul>	<p><b>Unit 2</b></p> <ul style="list-style-type: none"> <li>- Importance and Characteristics of the Arabic Script Ruq'ah in modern time.</li> <li>- Importance and Characteristics of the Arabic Script Naskh in modern time.</li> <li>- Familiarity with different Arabic scripts.</li> <li>- Al-Aqlaam Al-Sittah</li> <li>- Pioneers of the Arabic scripts/calligraphy. <ul style="list-style-type: none"> <li>• Ibn Muqlah</li> <li>• Ibn Al-Bawwab</li> </ul> </li> </ul>
<p><b>Unit 3</b></p> <ul style="list-style-type: none"> <li>- Benefits of Good handwriting</li> <li>- Famous Arabic fonts of computer</li> <li>- Practice of the Arabic scripts: Naskh and Ruq'ah</li> </ul>	

**Teaching Learning Process**

- The teacher will introduce different aspects of Arabic scripts to students.
- The students will practice the prescribed scripts to make their handwriting beautiful.
- The teacher will also use computer to familiarize the students with different Arabic scripts of it.

**Assessment Methods**

Internal Assessment:

- a. Class test: 10 Marks
- b. Assignment: 10 Marks
- c. Attendance: 05 Marks

End Semester Exam: 75 Marks

Total Marks: 100 Marks

**Keywords**

- Arabic scripts
- Naskh
- Ruq'ah
- Font

**References:**

1. M. Ziauddin: Muslim Calligraphy, Kitab Bhawan, Delhi
2. مولانا نور عالم خليل الأميني : خط رقعه كيون اور كيسے سيكھیں؟، ديوبند
3. د. عادل الألوسي : الخط العربي نشأته وتطوره، القاهرة.
4. د. إبراهيم سليمان شيخ العيد، الخط العربي حضارة ومهارة، مكتبة سمير منصور، غزة، فلسطين .

**Additional Resources:**

1. Muhammad Sohail: Administrative and Cultural History of Islam, New Delhi.
2. مركز الملك فيصل للبحوث والدراسات الإسلامية : الخط العربي من خلال المخطوطات، المملكة العربية السعودية.

## SEC –40: रचनात्मक लेखन

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
रचनात्मक लेखन	2			2		

## Learning Objectives

- विद्यार्थियों के मौखिक और लिखित अभिव्यक्ति कौशल को विकसित करना।
- उनमें कल्पनाशीलता और रचनात्मकता का विकास करना।
- साहित्य की विविध विधाओं और उनकी रचनात्मक शैली का परिचय कराते हुए लेखन की ओर प्रेरित करना।
- प्रिंट एवं इलेक्ट्रॉनिक माध्यमों के लिए लेखन की प्रवृत्ति को विकसित करना।

## Learning outcomes

इस पाठ्यक्रम के अध्ययन के पश्चात् विद्यार्थियों में:

- मौखिक और लिखित अभिव्यक्ति कौशल को विकसित होने में मदद मिलेगी।
- उसमें कल्पनाशीलता और रचनात्मकता का विकास हो सकेगा।
- साहित्य की विविध विधाओं और उनकी रचनात्मकता शैली का परिचय होगा जिससे वे स्वयं भी इन विधाओं में लेखन की अग्रसर हो सकेंगे।



- प्रिंट एवं इलेक्ट्रॉनिक माध्यमों के लिए लेखन की ओर भी ये अग्रसर होंगे।

### SYLLABUS OF SEC-40

इकाई 1

(5 सप्ताह)

#### रचनात्मक लेखन: अवधारणा: स्वरूप आधार एवं विश्लेषण

- भाव एवं विचार की रचना में अभिव्यक्ति की प्रक्रिया
- अभिव्यक्ति के विविध क्षेत्र: साहित्य पत्रकारिता, विज्ञापन, भाषण
- लेखन के विविध रूप: मौखिक-लिखित, गद्य-पद्य, कथात्मक-कथेतर
- अर्थ निर्मिति के आधार: शब्द और अर्थ की मीमांसा शब्द के पुराने-नए प्रयोग, शब्द की व्याकरणिक कोटि

इकाई 2

भाषा भंगिमा और साहित्य लेखन

(5 सप्ताह)

- भाषा की भंगिमाएँ: औपचारिक-अनौपचारिक, मौखिक-लिखित, मानक भाषिक संदर्भ: क्षेत्रीय, वर्ग-सापेक्ष, समूह-सापेक्ष
- रचना-सौष्ठव: शब्दशक्ति, प्रतीक, बिम्ब, अलंकारवक्रता
- कविता: संवेदना, भाषिक सौष्ठव, छंदबद्ध-छंदमुक्त, लय, गति, तुक
- कथा-साहित्य: वस्तु, पात्र, परिवेश, कथ्य और भाषा

Unit III

(5 weeks)

#### विविध विधाओं एवं सूचना माध्यमों के लिए लेखन

- नाट्य-साहित्य: वस्तु, पात्र, परिवेश, कथ्य, रंगमंच और नाट्य-भाषा
- विविध गद्य विधाएँ: निबंध, संस्मरण, आत्मकथा, व्यंग्य, रिपोर्टाज, यात्रा-वृत्तांत
- प्रिंट माध्यम के लिए लेखन: फीचर, यात्रा-वृत्तांत, साक्षात्कार, विज्ञापन

- इलेक्ट्रानिक माध्यम के लिए लेखन: विज्ञापन, पटकथा, संवाद

**Practical Exercises if any:**

नोट: उपर्युक्त का परिचय देते हुए इनका अभ्यास भी करवाया जाए।

### **References and suggested Readings**

1. साहित्य चिंतन: रचनात्मक आयाम: रघुवंश
2. शैली: रामचंद्र मिश्र
3. रचनात्मक लेखन: सं. रमेश गौतम
4. कविता क्या है: विश्वनाथ प्रसाद तिवारी
5. कथा-पटकथा: मन्नू भंडारी
6. पटकथा लेखन: मनोहर श्याम जोशी
7. कला की जरूरत: अर्नेस्ट फिशर: अनुवादक: रमेश उपाध्याय
8. साहित्य का सौंदर्यशास्त्र: रवींद्रनाथ श्रीवास्तव
9. कविता: रचना-प्रक्रिया: कुमार विमल

**Examination scheme and mode:**

**Total Marks: 100**

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

## SEC – 41: पटकथा लेखन

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

#### Course Objective:

- पटकथा लेखन का परिचय कराना ।
- विद्यार्थी की लेखन-क्षमता और भाषा-कौशल को बढ़ावा देना ।
- विद्यार्थी को लेखन में रोजगार सम्बन्धी क्षेत्रों के लिए तैयार करना ।

#### Course Learning Outcomes:

- पटकथा लेखन तथा उसके तकनीकी शब्दों से विद्यार्थी अवगत हो सकेगा ।
- पटकथा लेखन की जानकारी मिलने के उपरान्त विद्यार्थी के लिए रोजगार की संभावनाएँ बनेंगी ।
- विद्यार्थी भाषायी सम्प्रेषण को समझते हुए लेखन से सम्बन्धित विभिन्न पक्षों से अवगत हो सकेगा ।
- विद्यार्थी में अभिव्यक्ति कौशल का विकास हो सकेगा ।

### SYLLABUS OF SEC-41

#### यूनिट 1

(4 सप्ताह)

- पटकथा लेखन: परिचय
- पटकथा के तत्व
- पटकथा के प्रकार
- पटकथा की शब्दावली

#### यूनिट 2

(4 सप्ताह)

- पटकथा लेखन में शोध का महत्व
- चरित्र की निर्मिति और विकास
- एक दृश्य का लिखा जाना
- तीन अंक (थ्री एक्ट) और पाँच अंक (फाइव एक्ट) को समझना

**यूनिट 3**

(5 सप्ताह)

- वेबसीरीज के लिए पटकथा लेखन
- लघु फ़िल्म के लिए पटकथा लेखन
- वृत्तचित्र के लिए पटकथा लेखन
- विज्ञापन फ़िल्म के लिए पटकथा लेखन

**यूनिट 4**

(3 सप्ताह)

- पटकथा का पाठ और विश्लेषण
- किसी आईडिया को स्क्रीन प्ले के तौर पर विकसित करना

**सन्दर्भ पुस्तकें:**

- पटकथा कैसे लिखें: राजेंद्र पांडेय - वाणी प्रकाशन, दिल्ली, संस्करण 2015
- पटकथा लेखन : एक परिचय - मनोहर श्याम जोशी - राजकमल प्रकाशन, दिल्ली संस्करण 2000
- कथा-पटकथा: मन्नू भंडारी - वाणी प्रकाशन, दिल्ली, संस्करण 2014
- व्यावहारिक निर्देशिका: पटकथा लेखन: असगर वज़ाहत - राजकमल प्रकाशन, दिल्ली संस्करण 2011
- आईडिया से परदे तक: रामकुमार सिंह - राजकमल प्रकाशन, दिल्ली संस्करण 2021

**Examination Scheme & Mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

## SEC – 42: रंगमंच

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

## Course Objective:

- हिन्दी रंगमंच का सामान्य परिचय कराना ।
- नाट्य-प्रस्तुति की प्रक्रिया की जानकारी देना ।
- अभिनय के विभिन्न पक्षों से अवगत कराना ।
- रंगमंच के खेलों और गतिविधियों से अवगत कराना ।

## Course Learning Outcomes:

- नाट्य-प्रस्तुति की प्रक्रिया से विद्यार्थी अवगत हो सकेगा ।
- रंगमंच की सामान्य जानकारी मिलने के उपरान्त इस क्षेत्र में विद्यार्थी के लिए रोजगार की संभावनाएँ बनेंगी ।
- रंगमंचीय गतिविधियों से विद्यार्थी के व्यक्तित्व का विकास हो सकेगा ।
- विद्यार्थी में अभिव्यक्ति कौशल का विकास हो सकेगा ।

## SYLLABUS OF SEC-42

## यूनिट 1

(4 सप्ताह)

- भरत मुनि कृत नाट्यशास्त्र (संक्षिप्त परिचय)
- हिन्दी का पारंपरिक रंगमंच (संक्षिप्त परिचय)

## यूनिट 2

(4 सप्ताह)

प्रस्तुति-प्रक्रिया: आलेख का चयन, अभिनेताओं का चयन, दृश्य-परिकल्पना (ध्वनि-संगीत-नृत्य-प्रकाश), पूर्वाभ्यास

**यूनिट 3** (4 सप्ताह)  
अभिनय की तैयारी: वाचिक, आंगिक, आहार्य, सात्विक

**यूनिट 4** (2 सप्ताह)  
आशु अभिनय, थिएटर गेम्स, संवाद-वाचन, शारीरिक अभ्यास, सीन वर्क

**यूनिट 5** (1 सप्ताह)  
मंच प्रबंधन: सेट, रंग-सामग्री, प्रचार-प्रसार, ब्रोशर-निर्माण

**सन्दर्भ पुस्तकें:**

- संक्षिप्त नाट्यशास्त्रम् - राधावल्लभ त्रिपाठी, वाणी प्रकाशन, दिल्ली, 2009
- रंग स्थापत्य: कुछ टिप्पणियाँ - एच. वी. शर्मा राष्ट्रीय नाट्य विद्यालय प्रकाशन, दिल्ली, 2004
- पारंपरिक भारतीय: रंगमंच अनंतधाराएँ - कपिला वात्स्यायन, अनुवाद - बदी उज़्जम्मा, नेशनल बुक ट्रस्ट, दिल्ली, 1995
- हिंदी रंगमंच का लोकपक्ष, सं प्रो. रमेश गौतम, स्वराज प्रकाशन, दिल्ली 2020
- मंच आलोकन - जी. एन. दासगुप्ता, अनुवाद - अजय मलकानी, नेशनल बुक ट्रस्ट, दिल्ली, 2006
- रंगमंच के सिद्धांत - सं महेश आनंद, देवेन्द्र राज अंकुर, राजकमल प्रकाशन, दिल्ली 2008

**Examination Scheme & Mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**SEC – 43: Beginners Course to Calligraphy**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
	2			2		

**Learning Objectives**

The Learning Objectives of this course are as follows:

- To teach students the art of Calligraphy.
- To make students better at handwriting and embellish the scripts.
- To help the students communicate with creativity.

**Learning outcomes**

The Learning Outcomes of this course are as follows:

- Students will be skilled in calligraphy scripts.
- Learning flourishing will help to develop good writing.
- Practice sessions will further a project at the end of semester.
- Will induce skills to set up a business, too.

**SYLLABUS OF SEC-43**

**Unit 1: Introduction to Calligraphy**

**(3 Weeks)**

- Definition, History of calligraphy, Calligraphy at the Global level, Types of Calligraphy: Classical Calligraphy & Modern Calligraphy
- Practice Sessions: Introducing students to Calligraphy and its types through images, videos and animations.

**Unit 2: Introduction to the Writing tools (5 Weeks)**

- Tool Kit, Different Types of Pens, Different Types of Nibs, Different Types of Brushes, Different Types of Inks
- Practice Sessions: Display of Writing items, Discussion on the usage of different types of pens, nibs and brushes through hands-on activities

**Unit 3: Foundation to Calligraphy (8 Weeks)**

- How to write letters?, Majuscules, Miniscules, Numbers, Learning Strokes, Sans Serif B- point, Celtic, Italian Script, Roman Script, Gothic Script
- Practice Sessions: Learning and practicing strokes- Upstroke, Downstroke, Overturn, Underturn, Compound curve, Oval, Ascending loop
- Hands-on activities and Assessment on Sans Serif B-point, Celtic, Italian Script, Roman Script, Gothic Script, Flourishing

**Essential/recommended readings**

- Suepsuan, P. A. (2021). Start Calligraphy The Right way to write: Learn Calligraphy The Complete Book - Modern Calligraphy Pen For Beginners, Learning Resources Step By Step Number Line, Mastering Modern Calligraphy. Independently published.
- C., & Co., T. P. (2020). Modern Calligraphy Set for Beginners: A Creative Craft Kit for Adults featuring Hand Lettering 101 Book, Brush Pens, Calligraphy Pens, and More. Paige Tate & Co.

**Examination scheme and mode:**

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.